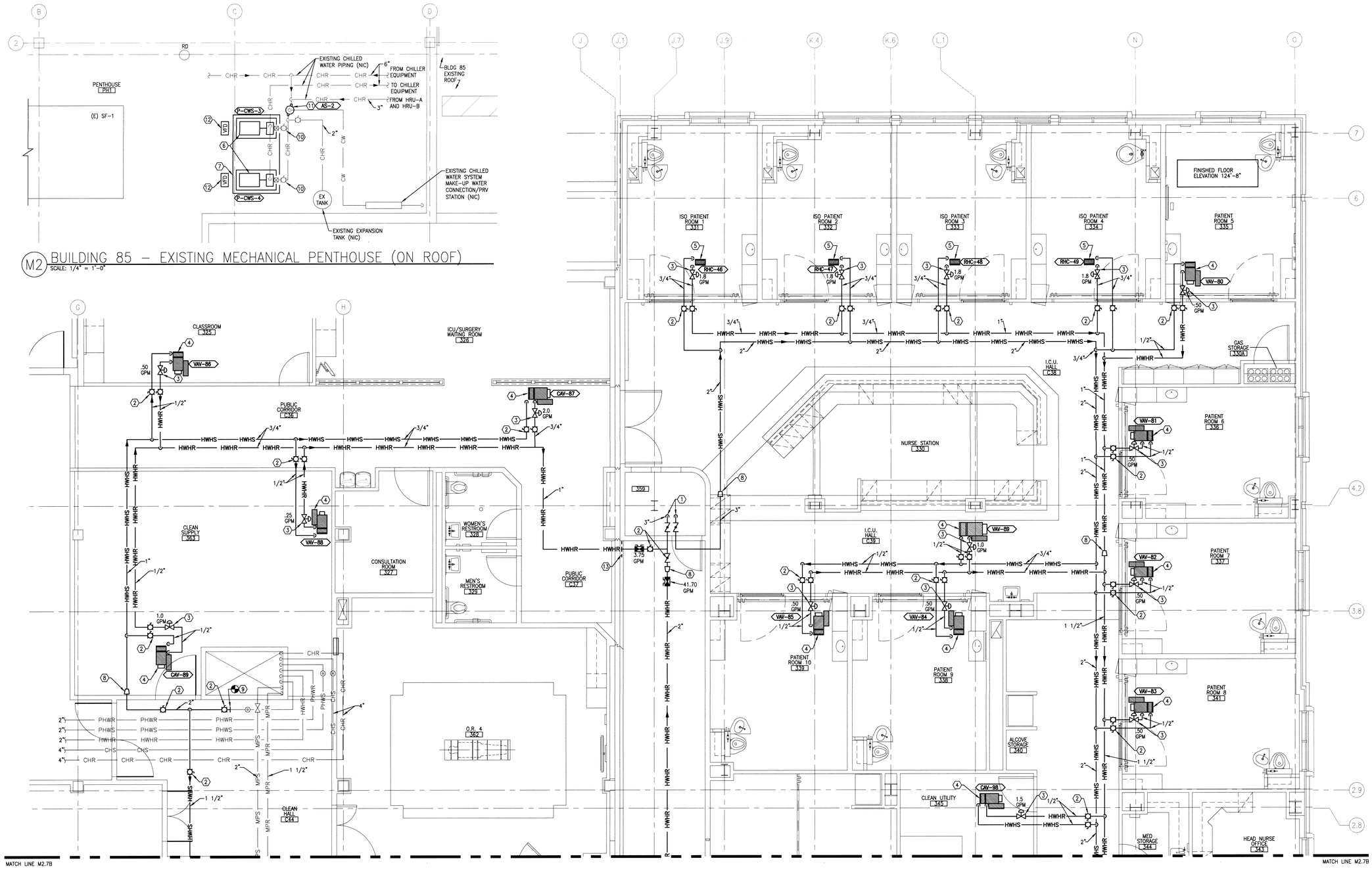


M2 BUILDING 85 – EXISTING MECHANICAL PENTHOUSE (ON ROOF)
SCALE: 1/4" = 1'-0"

M2 BUILDING 85 – THIRD FLOOR MECHANICAL PIPING PLAN – AREA 'A'
SCALE: 1/4" = 1'-0"

PLAN NORTH 0 2' 4' 8'

GENERAL SHEET NOTES

A. THIS PROJECT WILL BE ACCOMPLISHED IN PHASES. THE CONTRACTOR IS TO ALLOW A MINIMUM OF 14 DAYS DOWN TIME BETWEEN EACH PHASE. THIS IS TO ALLOW THE MEDICAL CENTER TIME TO RELOCATE PERSONNEL, EQUIPMENT, AND FURNISHINGS. ALL WORK IN A GIVEN PHASE (INCLUDING ALL PUNCHLIST ITEMS) MUST BE COMPLETED PRIOR TO THE VA DOWN TIME. DOWN TIME IS INCLUDED IN THE OVERALL PROJECT SCHEDULE.

B. THE CEILING SPACE FROM THE BOTTOM OF THE CEILING GRID TO A MINIMUM OF 6" ABOVE THE BOTTOM OF THE CEILING GRID IS RESERVED FOR INSTALLATION OF CEILING MOUNTED ITEMS (I.E. LIGHT FIXTURES, SPEAKERS, DIFFUSERS). NO PIPING, DUCTWORK, CONDUITS, ETC., EXCEPT DROPS SERVING THE CEILING MOUNTED ITEMS, IS ALLOWED TO BE INSTALLED IN THIS SPACE, UNLESS OTHERWISE APPROVED BY THE RESIDENT ENGINEER.

C. CONTRACTOR IS REQUIRED TO FOLLOW ALL OSHA REGULATIONS CONCERNING CONSTRUCTION. THE SUPERINTENDENT IS REQUIRED TO HAVE COMPLETED, AS A MINIMUM, OSHA'S 10-HOUR TRAINING AND BE KNOWLEDGEABLE OF GENERAL SAFETY REQUIREMENTS FOR CONFINED SPACES, FALL PROTECTION, PERSONAL PROTECTIVE EQUIPMENT, TRENCHING, SCAFFOLDING, CRANES, ELECTRICAL, ETC. APPLICABLE SUBCONTRACTORS ARE TO HAVE A COMPETENT PERSON ON SITE WHEN REQUIRED BY OSHA. IF ACCESSING A CONFINED SPACE, THE CONTRACTOR IS REQUIRED HAVE THEIR OWN CONFINED SPACE AIR MONITOR AND TO TEST THE AIR PRIOR TO ENTERING ANY CONFINED SPACE. IF THE CONTRACTOR MUST ENTER A SANITARY SEWER MANHOLE, IN ADDITION TO A CONFINED SPACE AIR MONITOR, THEY MUST HAVE PROPER OSHA RESCUE EQUIPMENT FOR A PERMIT REQUIRED CONFINED SPACE. WHERE IT IS NOT POSSIBLE FOR THE VA TO SHUTDONWN AN ELECTRICAL PANEL OR CIRCUIT, THE CONTRACTOR MUST PROVIDE AND USE THE APPROPRIATE SAFETY CLOTHING AND EQUIPMENT AS REQUIRED BY NFPA 70E. THE VA WILL BE MONITORING THE CONTRACTOR'S COMPLIANCE WITH OSHA REGULATIONS. FAILURE TO COMPLY IS GROUNDS FOR STOPPING WORK.

D. CONSTRUCTION FOR THIS PROJECT WILL TAKE PLACE IN BUILDINGS THAT REMAIN OCCUPIED BY HOSPITAL STAFF AND PATIENTS. DUST CONTROL, NOISE, AND VIBRATION ARE AREAS OF MAJOR CONCERN. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN AIR TIGHT DUST BARRIERS AND EXHAUST FANS DURING THE DURATION OF DUST PRODUCING WORK AS SPECIFIED AND DIRECTED BY THE RESIDENT ENGINEER. SEE SPECIFICATION, SECTION 01010, ARTICLE 1.6, ALTERATIONS, PARAGRAPH PROTECTION, FOR ADDITIONAL INFORMATION. WORK THAT CREATES EXCESSIVE NOISE AND/OR VIBRATIONS MUST BE CAREFULLY SCHEDULED AND COORDINATED WITH THE HOSPITAL. THERE WILL BE TIMES WHEN NOISE OR VIBRATION PRODUCING WORK WILL NOT BE ALLOWED AND IT WILL HAVE TO BE SCHEDULED FOR OTHER NON-CRITICAL TIMES.

E. VA WILL SHUT DOWN EXISTING UTILITY SYSTEM AS NECESSARY FOR CONTRACTOR TO PERFORM REQUIRED WORK. CONTRACTOR IS RESPONSIBLE FOR DRAINING EXISTING WET SYSTEMS, SUCH AS WATER, CHILLED WATER, HEATING WATER ETC. AS REQUIRED TO ACCOMPLISH NEW WORK. CONTRACTOR IS ALSO RESPONSIBLE FOR RE-FILLING SYSTEMS INCLUDING ADDING CHEMICAL AS REQUIRED. IT IS ACCEPTABLE TO SALVAGE EXISTING TREATED WATER IN CLEAN STORAGE CONTAINERS APPROVED BY THE VA, AND RE-INJECT IT INTO THE SYSTEM UPON COMPLETION OF WORK. ANY TREATED WATER NOT RE-INJECTED IS TO BE PROPERLY DISPOSED OF.

F. ALL PIPING IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD SUSPENDED CEILING.

G. ACCESS PANELS IN HARD SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, TRAPS, CLEANOUTS, CONTROLS, ETC. ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS.

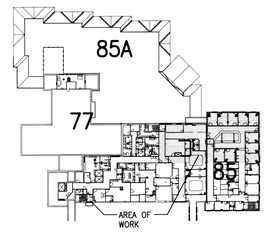
H. ALL MAJOR PIPING AND PLUMBING SERVICES SHALL BE INSTALLED ABOVE ALL DUCTWORK COORDINATE PIPE ELEVATIONS WITH HVAC CONTRACTOR.

I. REFERENCE PIPE HANGER SUPPORT DETAIL 4/M6.0 FOR MAXIMUM PIPE SUPPORT SPACING REQUIREMENTS.

J. PROVIDE DRAIN VALVES AND AIR VENTS AT ALL HIGH AND LOW POINTS FOR ALL HYDRONIC PIPING SYSTEMS AND WHERE INDICATED ON PLANS. REFERENCE DETAIL 7/M6.0.

SHEET KEYNOTES

1. 3" HEATING HOT WATER SUPPLY AND RETURN PIPING UP FROM FLOOR BELOW. SEE SHEET M2.6 FOR CONTINUATION.
2. LOCATE AND COORDINATE ISOLATION VALVE LOCATIONS WITH HVAC TO PROVIDE EASY ACCESSIBILITY FOR SERVICE.
3. ELECTRIC MODULATING 2-WAY CONTROL VALVE. VALVES SHALL BE BY BELIMO. SIZE VALVE FOR GPM SHOWN WITH 5-10 PSI DROP. SEE APPLICABLE CONTROL DIAGRAM 2/M5.1 OR 6/M5.1.
4. LOCATION OF VARIABLE AIR VOLUME AND/OR CONSTANT VOLUME TERMINAL UNIT WITH RE-HEAT COIL. COORDINATE PIPING CONNECTION LOCATION WITH SHEET METAL CONTRACTOR. SEE DETAIL 10/M6.0.
5. LOCATION OF DUCT MOUNTED RE-HEAT COIL. COORDINATE PIPING CONNECTION LOCATION WITH SHEET METAL CONTRACTOR. SEE DETAIL 10/M6.0.
6. CONTRACTOR SHALL REMOVE AND REPLACE EXISTING CHILLED WATER PUMPS P-CWS-3/P-CWS-4. SEE PUMP SCHEDULE ON SHEET M0.2 FOR TECHNICAL AND DESIGN BASIS INFORMATION.
7. COORDINATE AND LOCATE NEW PUMPS ON NEW 4" HIGH HOUSEKEEPING PAD PROVIDED BY GENERAL CONTRACTOR. SEE STRUCTURAL PLANS.
8. PROVIDE REDUCER AT THIS LOCATION.
9. CONNECT TO EXISTING 2" HEATING WATER SUPPLY WITH NEW PIPING.
10. CONTRACTOR SHALL MAINTAIN AND/OR REMODEL EXISTING CHILLED WATER SYSTEM VALVING AND PUMP CONNECTIONS AS NEEDED TO ACCOMMODATE NEW PUMP INSTALLATION AND MAINTAIN SERVICE ACCESSIBILITY AROUND EXISTING EQUIPMENT.
11. REMOVE AND REPLACE EXISTING AIR SEPARATOR. SEE AIR SEPARATOR SCHEDULE ON SHEET M0.2 FOR TECHNICAL INFORMATION AND DESIGN BASIS. CONTRACTOR SHALL MAINTAIN AND/OR REMODEL EXISTING CHILLED WATER SYSTEM VALVING AND PIPE CONFIGURATION AS NEEDED TO ACCOMMODATE NEW INSTALLATION WHILE MAINTAINING SERVICE CLEARANCES AND ACCESSIBILITY AROUND EXISTING EQUIPMENT.
12. MECHANICAL CONTRACTOR SHALL PROVIDE NEW VARIABLE SPEED DRIVES TO ACCOMMODATE NEW PUMP INSTALLATION. SEE PUMP SCHEDULE ON SHEET M0.2 FOR DESIGN BASIS INFORMATION.
13. PENETRATE EXISTING STRUCTURE AT THIS LOCATION BELOW EXISTING SPANDREL BEAM WITH PIPING. COORDINATE PENETRATION LOCATION WITH GENERAL CONTRACTOR AND STRUCTURAL/ARCHITECTURAL DRAWINGS. PROVIDE FLEXIBLE PIPE CONNECTION ACROSS BUILDING EXPANSION JOINT.



THIRD FLOOR KEY PLAN
NOT TO SCALE
PLAN NORTH

FOR CONSTRUCTION

REVISIONS | DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317_M27A

XREF FILE NAME: 85A3FL, 85M3HV, 85P3HV, 85AR, 85MRHV, 531-317_xVAbord

DRAWING TITLE: THIRD FLOOR MECHANICAL PIPING PLAN AREA 'A'

APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE

APPROVED: MEDICAL CENTER DIRECTOR

PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT

BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA

LOCATION: VAMC BOISE, IDAHO

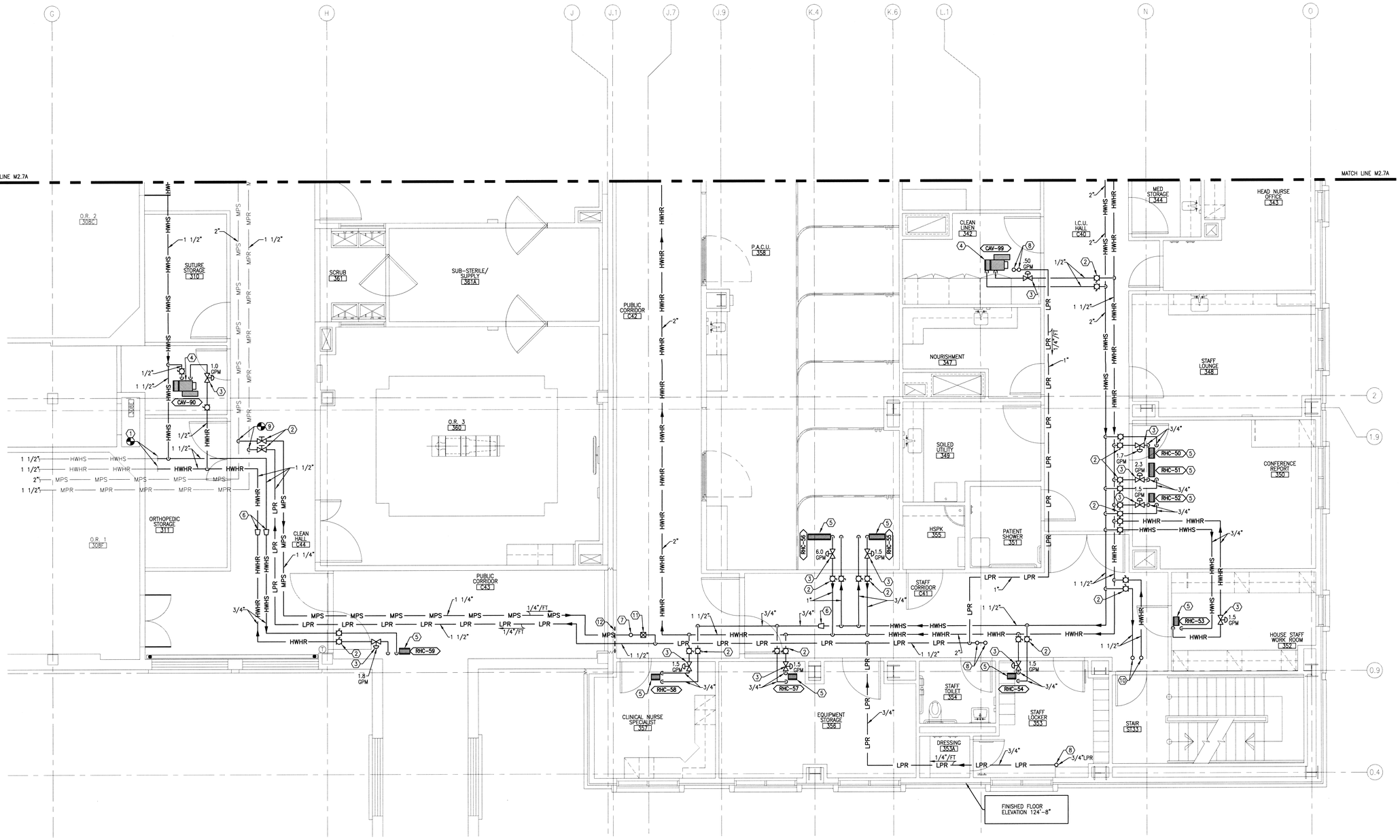
DATE: 11/01/2011

PROJECT NO.: 531-317

DRAWING NO.: M2.7A

DWG 101 OF 188

DEPARTMENT OF VETERANS AFFAIRS



M2 BUILDING 85 – THIRD FLOOR MECHANICAL PIPING PLAN – AREA 'B'

SCALE: 1/4" = 1'-0"

PLAN NORTH 0 2' 4' 8'

GENERAL SHEET NOTES

A. THIS PROJECT WILL BE ACCOMPLISHED IN PHASES. THE CONTRACTOR IS TO ALLOW A MINIMUM OF 14 DAYS DOWN TIME BETWEEN EACH PHASE. THIS IS TO ALLOW THE MEDICAL CENTER TIME TO RELOCATE PERSONNEL, EQUIPMENT, AND FURNISHINGS. ALL WORK IN A GIVEN PHASE (INCLUDING ALL PUNCHLIST ITEMS) MUST BE COMPLETED PRIOR TO THE VA DOWN TIME. DOWN TIME IS INCLUDED IN THE OVERALL PROJECT SCHEDULE.

B. THE CEILING SPACE FROM THE BOTTOM OF THE CEILING GRID TO A MINIMUM OF 6" ABOVE THE BOTTOM OF THE CEILING GRID IS RESERVED FOR INSTALLATION OF CEILING MOUNTED ITEMS (I.E. LIGHT FIXTURES, SPEAKERS, DIFFUSERS). NO PIPING, DUCTWORK, CONDUITS, ETC., EXCEPT DROPS SERVING THE CEILING MOUNTED ITEMS, IS ALLOWED TO BE INSTALLED IN THIS SPACE, UNLESS OTHERWISE APPROVED BY THE RESIDENT ENGINEER.

C. CONTRACTOR IS REQUIRED TO FOLLOW ALL OSHA REGULATIONS CONCERNING CONSTRUCTION. THE SUPERINTENDENT IS REQUIRED TO HAVE COMPLETED, AS A MINIMUM, OSHA'S 10-HOUR TRAINING AND BE KNOWLEDGEABLE OF GENERAL SAFETY REQUIREMENTS FOR CONFINED SPACES, FALL PROTECTION, PERSONAL PROTECTIVE EQUIPMENT, TRENCHING, SCAFFOLDING, CRANES, ELECTRICAL, ETC. APPLICABLE SUBCONTRACTORS ARE TO HAVE A COMPETENT PERSON ON SITE WHEN REQUIRED BY OSHA. IF ACCESSING A CONFINED SPACE, THE CONTRACTOR IS REQUIRED HAVE THEIR OWN CONFINED SPACE AIR MONITOR AND TO TEST THE AIR PRIOR TO ENTERING ANY CONFINED SPACE. IF THE CONTRACTOR MUST ENTER A SANITARY SEWER MANHOLE, IN ADDITION TO A CONFINED SPACE AIR MONITOR, THEY MUST HAVE PROPER OSHA RESCUE EQUIPMENT FOR A PERMIT REQUIRED CONFINED SPACE. WHERE IT IS NOT POSSIBLE FOR THE VA TO SHUTDONWN AN ELECTRICAL PANEL OR CIRCUIT, THE CONTRACTOR MUST PROVIDE AND USE THE APPROPRIATE SAFETY CLOTHING AND EQUIPMENT AS REQUIRED BY NFPA 70E. THE VA WILL BE MONITORING THE CONTRACTOR'S COMPLIANCE WITH OSHA REGULATIONS. FAILURE TO COMPLY IS GROUNDS FOR STOPPING WORK.

D. CONSTRUCTION FOR THIS PROJECT WILL TAKE PLACE IN BUILDINGS THAT REMAIN OCCUPIED BY HOSPITAL STAFF AND PATIENTS. DUST CONTROL, NOISE, AND VIBRATION ARE AREAS OF MAJOR CONCERN. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN AIR TIGHT DUST BARRIERS AND EXHAUST FANS DURING THE DURATION OF DUST PRODUCING WORK AS SPECIFIED AND DIRECTED BY THE RESIDENT ENGINEER. SEE SPECIFICATION, SECTION 01010, ARTICLE 1.6, ALTERATIONS, PARAGRAPH PROTECTION, FOR ADDITIONAL INFORMATION. WORK THAT CREATES EXCESSIVE NOISE AND/OR VIBRATIONS MUST BE CAREFULLY SCHEDULED AND COORDINATED WITH THE HOSPITAL. THERE WILL BE TIMES WHEN NOISE OR VIBRATION PRODUCING WORK WILL NOT BE ALLOWED AND IT WILL HAVE TO BE SCHEDULED FOR OTHER NON-CRITICAL TIMES.

E. VA WILL SHUT DOWN EXISTING UTILITY SYSTEM AS NECESSARY FOR CONTRACTOR TO PERFORM REQUIRED WORK. CONTRACTOR IS RESPONSIBLE FOR DRAINING EXISTING WET SYSTEMS, SUCH AS WATER, CHILLED WATER, HEATING WATER ETC. AS REQUIRED TO ACCOMPLISH NEW WORK. CONTRACTOR IS ALSO RESPONSIBLE FOR RE-FILLING SYSTEMS INCLUDING ADDING CHEMICAL AS REQUIRED. IT IS ACCEPTABLE TO SALVAGE EXISTING TREATED WATER IN CLEAN STORAGE CONTAINERS APPROVED BY THE VA, AND RE-INJECT IT INTO THE SYSTEM UPON COMPLETION OF WORK. ANY TREATED WATER NOT RE-INJECTED IS TO BE PROPERLY DISPOSED OF.

F. ALL PIPING IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD SUSPENDED CEILING.

G. ACCESS PANELS IN HARD SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, TRAPS, CLEANOUTS, CONTROLS, ETC. ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS.

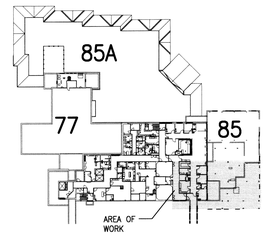
H. ALL MAJOR PIPING AND PLUMBING SERVICES SHALL BE INSTALLED ABOVE ALL DUCTWORK COORDINATE PIPE ELEVATION WITH HVAC CONTRACTOR.

I. REFERENCE PIPE HANGER SUPPORT DETAIL 4/M6.0 FOR MAXIMUM PIPE SUPPORT SPACING REQUIREMENTS.

J. PROVIDE DRAIN VALVES AND AIR VENTS AT ALL HIGH AND LOW POINTS FOR ALL HYDRONIC PIPING SYSTEMS AND WHERE INDICATED ON PLANS. REFERENCE DETAIL 7/M6.0.

SHEET KEYNOTES

1. CONNECT TO EXISTING 1 1/2" HEATING WATER SUPPLY AND RETURN PIPING AT THIS LOCATION WITH NEW PIPING.
2. LOCATE AND COORDINATE ISOLATION VALVE LOCATIONS WITH HVAC TO PROVIDE EASY ACCESSIBILITY FOR SERVICE.
3. ELECTRIC MODULATING 2-WAY CONTROL VALVE. VALVES SHALL BE BY BELIMO. SIZE VALVE FOR GPM SHOWN WITH 5-10 PSI DROP. SEE APPLICABLE CONTROL DIAGRAM 2/M5.1 OR 6/M5.1.
4. LOCATION OF VARIABLE AIR VOLUME AND/OR CONSTANT VOLUME TERMINAL UNIT WITH RE-HEAT COIL. COORDINATE PIPING CONNECTION LOCATION WITH SHEET METAL CONTRACTOR. SEE DETAIL 10/M6.0.
5. LOCATION OF DUCT MOUNTED RE-HEAT COIL. COORDINATE PIPING CONNECTION LOCATION WITH SHEET METAL CONTRACTOR. SEE DETAIL 10/M6.0.
6. PROVIDE REDUCER AT THIS LOCATION.
7. 1 1/4" MEDIUM PRESSURE STEAM (30 PSI) UP TO PENTHOUSE. SEE SHEET M2.8 FOR CONTINUATION.
8. LOW PRESSURE CONDENSATE RETURN DOWN FROM PENTHOUSE. SEE SHEET M2.8 FOR CONTINUATION.
9. CONNECT TO EXISTING MEDIUM PRESSURE STEAM (30 PSI) AND CONDENSATE RETURN AT THIS LOCATION WITH NEW PIPING.
10. RISE UP TO PENTHOUSE WITH 1 1/2" HOT WATER HEATING SUPPLY AND RETURN PIPING AT THIS LOCATION. SEE SHEET M2.8 FOR CONTINUATION.
11. STEAM DRIP POCKET AND TRAP. SEE DETAIL 12/M6.0.
12. PENETRATE EXISTING STRUCTURE AT THIS LOCATION BELOW EXISTING SPANDREL BEAM WITH PIPING. COORDINATE PENETRATION LOCATION WITH GENERAL CONTRACTOR AND STRUCTURAL/ARCHITECTURAL DRAWINGS. PROVIDE FLEXIBLE PIPE CONNECTION ACROSS BUILDING EXPANSION JOINT.



THIRD FLOOR KEY PLAN
NOT TO SCALE
PLAN NORTH

FOR CONSTRUCTION

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 3/31 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME:
531-317_M27B

XREF FILE NAME:
85A3FL
85M3HV
85P3HV
531-317_xVAbord

DRAWING TITLE: THIRD FLOOR MECHANICAL PIPING PLAN AREA 'B'

PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT

APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE

APPROVED: MEDICAL CENTER DIRECTOR

BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA

LOCATION: VAMC BOISE, IDAHO

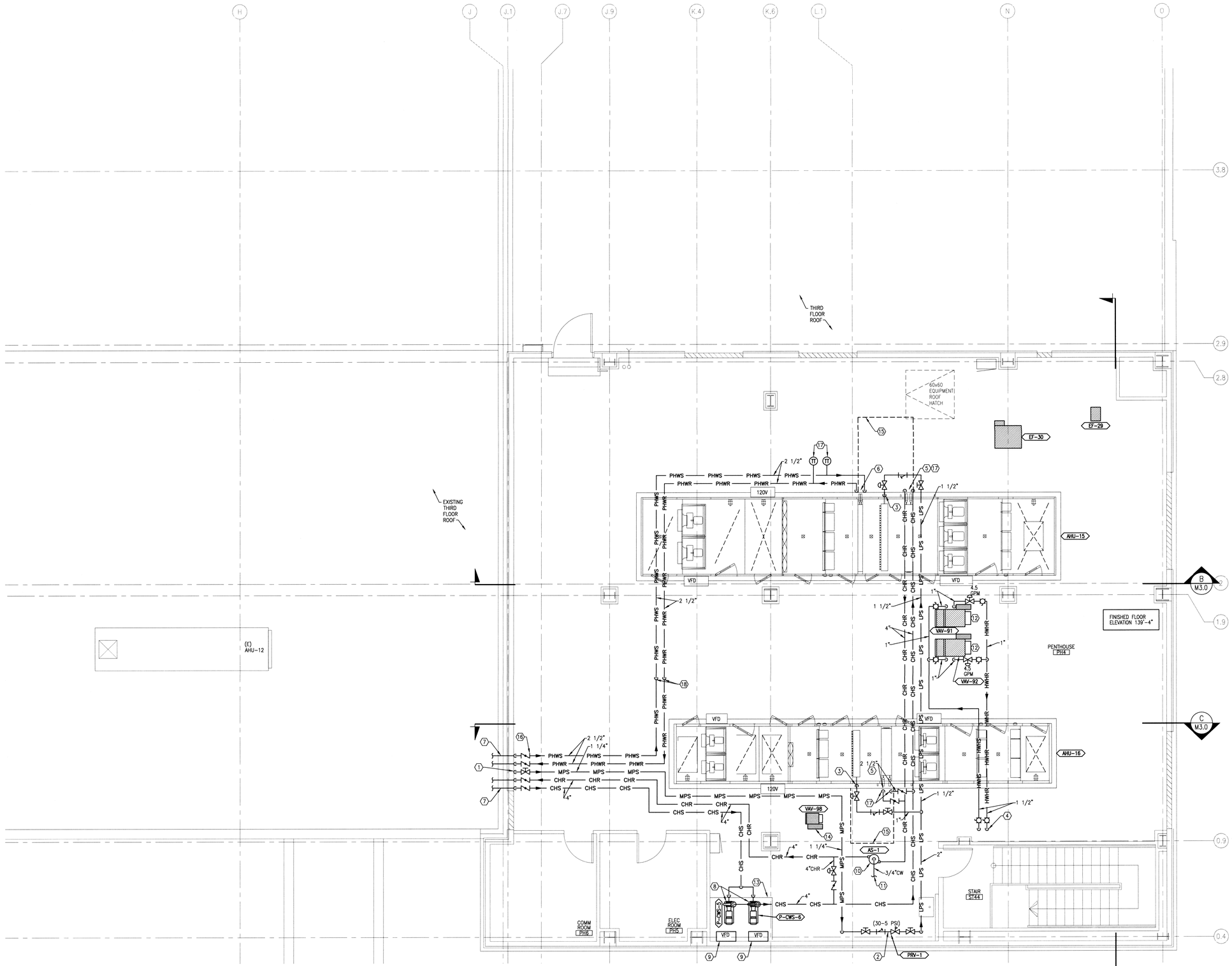
DATE: 11/01/2011

PROJECT NO.: 531-317

DRAWING NO.: M2.7B

DWG 102 OF 188

DEPARTMENT OF VETERANS AFFAIRS



M2 BUILDING 85 – PENTHOUSE MECHANICAL PIPING PLAN
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES

A. THIS PROJECT WILL BE ACCOMPLISHED IN PHASES. THE CONTRACTOR IS TO ALLOW A MINIMUM OF 14 DAYS DOWN TIME BETWEEN EACH PHASE. THIS IS TO ALLOW THE MEDICAL CENTER TIME TO RELOCATE PERSONNEL, EQUIPMENT, AND FURNISHINGS. ALL WORK IN A GIVEN PHASE (INCLUDING ALL PUNCHLIST ITEMS) MUST BE COMPLETED PRIOR TO THE VA DOWN TIME. DOWN TIME IS INCLUDED IN THE OVERALL PROJECT SCHEDULE.

B. THE CEILING SPACE FROM THE BOTTOM OF THE CEILING GRID TO A MINIMUM OF 6" ABOVE THE BOTTOM OF THE CEILING GRID IS RESERVED FOR INSTALLATION OF CEILING MOUNTED ITEMS (I.E. LIGHT FIXTURES, SPEAKERS, DIFFUSERS). NO PIPING, DUCTWORK, CONDUITS, ETC., EXCEPT DROPS SERVING THE CEILING MOUNTED ITEMS, IS ALLOWED TO BE INSTALLED IN THIS SPACE, UNLESS OTHERWISE APPROVED BY THE RESIDENT ENGINEER.

C. CONTRACTOR IS REQUIRED TO FOLLOW ALL OSHA REGULATIONS CONCERNING CONSTRUCTION. THE SUPERINTENDENT IS REQUIRED TO HAVE COMPLETED, AS A MINIMUM, OSHA'S 10-HOUR TRAINING AND BE KNOWLEDGEABLE OF GENERAL SAFETY REQUIREMENTS FOR CONFINED SPACES, FALL PROTECTION, PERSONAL PROTECTIVE EQUIPMENT, TRENCHING, SCAFFOLDING, CRANES, ELECTRICAL, ETC. APPLICABLE SUBCONTRACTORS ARE TO HAVE A COMPETENT PERSON ON SITE WHEN REQUIRED BY OSHA. IF ACCESSING A CONFINED SPACE, THE CONTRACTOR IS REQUIRED HAVE THEIR OWN CONFINED SPACE AIR MONITOR AND TO TEST THE AIR PRIOR TO ENTERING ANY CONFINED SPACE. IF THE CONTRACTOR MUST ENTER A SANITARY SEWER MANHOLE, IN ADDITION TO A CONFINED SPACE AIR MONITOR, THEY MUST HAVE PROPER OSHA RESCUE EQUIPMENT FOR A PERMIT REQUIRED CONFINED SPACE. WHERE IT IS NOT POSSIBLE FOR THE VA TO SHUTDONWN AN ELECTRICAL PANEL OR CIRCUIT, THE CONTRACTOR MUST PROVIDE AND USE THE APPROPRIATE SAFETY CLOTHING AND EQUIPMENT AS REQUIRED BY NFPA 70E. THE VA WILL BE MONITORING THE CONTRACTOR'S COMPLIANCE WITH OSHA REGULATIONS. FAILURE TO COMPLY IS GROUNDS FOR STOPPING WORK.

D. CONSTRUCTION FOR THIS PROJECT WILL TAKE PLACE IN BUILDINGS THAT REMAIN OCCUPIED BY HOSPITAL STAFF AND PATIENTS. DUST CONTROL, NOISE, AND VIBRATION ARE AREAS OF MAJOR CONCERN. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN AIR TIGHT DUST BARRIERS AND EXHAUST FANS DURING THE DURATION OF DUST PRODUCING WORK AS SPECIFIED AND DIRECTED BY THE RESIDENT ENGINEER. SEE SPECIFICATION, SECTION 01010, ARTICLE 1.6, ALTERATIONS, PARAGRAPH PROTECTION, FOR ADDITIONAL INFORMATION. WORK THAT CREATES EXCESSIVE NOISE AND/OR VIBRATIONS MUST BE CAREFULLY SCHEDULED AND COORDINATED WITH THE HOSPITAL. THERE WILL BE TIMES WHEN NOISE OR VIBRATION PRODUCING WORK WILL NOT BE ALLOWED AND IT WILL HAVE TO BE SCHEDULED FOR OTHER NON-CRITICAL TIMES.

E. VA WILL SHUT DOWN EXISTING UTILITY SYSTEM AS NECESSARY FOR CONTRACTOR TO PERFORM REQUIRED WORK. CONTRACTOR IS RESPONSIBLE FOR DRAINING EXISTING WET SYSTEMS, SUCH AS WATER, CHILLED WATER, HEATING WATER ETC. AS REQUIRED TO ACCOMPLISH NEW WORK. CONTRACTOR IS ALSO RESPONSIBLE FOR RE-FILLING SYSTEMS INCLUDING ADDING CHEMICAL AS REQUIRED. IT IS ACCEPTABLE TO SALVAGE EXISTING TREATED WATER IN CLEAN STORAGE CONTAINERS APPROVED BY THE VA, AND RE-INJECT IT INTO THE SYSTEM UPON COMPLETION OF WORK. ANY TREATED WATER NOT RE-INJECTED IS TO BE PROPERLY DISPOSED OF.

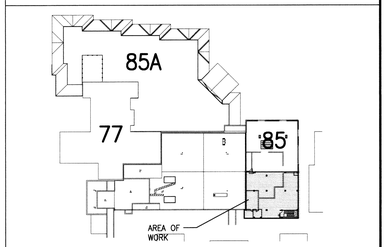
F. ALL MAJOR PIPING AND PLUMBING SERVICES SHALL BE INSTALLED ABOVE ALL DUCTWORK COORDINATE PIPE ELEVATION WITH HVAC CONTRACTOR.

G. REFERENCE PIPE HANGER SUPPORT DETAIL 4/M6.0 FOR MAXIMUM PIPE SUPPORT SPACING REQUIREMENTS.

H. PROVIDE DRAIN VALVES AND AIR VENTS AT ALL HIGH AND LOW POINTS FOR ALL HYDRONIC PIPING SYSTEMS AND WHERE INDICATED ON PLANS. REFERENCE DETAIL 7/M6.0.

SHEET KEYNOTES

1. 1 1/4" MEDIUM PRESSURE STEAM (30 PSI) UP FROM FLOOR BELOW. SEE SHEET M2.7B FOR CONTINUATION.
2. LOCATION OF STEAM PRESSURE REDUCING STATION. SEE DETAIL 6/M6.2.
3. CONNECT TO HUMIDIFIER SECTION OF AIR HANDLING UNIT. SEE DETAIL 2/M6.0.
4. 1 1/2" HEATING HOT WATER SUPPLY AND RETURN DOWN TO FLOOR BELOW. SEE SHEET M2.7B FOR CONTINUATION.
5. CONNECT TO CHILLED WATER COIL SECTION OF AIR HANDLING UNIT. SEE DETAIL 8/M6.1.
6. CONNECT TO PRE-HEAT COIL SECTION OF AIR HANDLING UNIT. SEE DETAIL 7/M6.1.
7. PENETRATE PENTHOUSE EXTERIOR WALL AT THIS LOCATION AND EXTEND PIPING OUTDOORS ON ROOF. SEE SHEET M2.9 FOR CONTINUATION. SEAL PENETRATION WEATHER TIGHT. PROVIDE WALL ESCUTCHEON AT PENETRATION.
8. LOCATION OF CHILLED WATER PUMPS WITH CONCRETE INERTIA BASE. SEE PUMP SCHEDULE ON SHEET M0.2 FOR TECHNICAL DATA AND DESIGN BASIS INFORMATION. SEE DETAIL 6/M6.0.
9. MECHANICAL CONTRACTOR SHALL PROVIDE VARIABLE SPEED DRIVES. REFERENCE PUMP SCHEDULE ON SHEET M0.2 FOR DESIGN BASIS INFORMATION.
10. LOCATION OF AIR SEPARATOR. SEE AIR SEPARATOR SCHEDULE ON SHEET M0.2 FOR TECHNICAL DATA AND DESIGN BASIS INFORMATION. SEE DETAIL 7/M6.2.
11. NEW CHILLED WATER SYSTEM MAKE-UP WATER CONNECTION FROM AIR SEPARATOR. SEE SHEET P2.2B FOR CONTINUATION.
12. LOCATION OF VARIABLE AIR VOLUME AND/OR CONSTANT VOLUME TERMINAL UNIT WITH RE-HEAT COIL. COORDINATE PIPING CONNECTION LOCATION WITH SHEET METAL CONTRACTOR. SEE DETAIL 10/M6.0.
13. 4" HIGH CONCRETE HOUSEKEEPING PAD PROVIDED BY GENERAL CONTRACTOR. COORDINATE SIZE AND LOCATION WITH EQUIPMENT SUPPLIED AND STRUCTURAL DRAWINGS.
14. COOLING ONLY TERMINAL UNIT.
15. COIL PULL CLEARANCE AREA. COORDINATE AND MAINTAIN CLEARANCE LOCATION WITH ALL TRADES.
16. LOCATE AND COORDINATE ISOLATION VALVE LOCATIONS WITH HVAC TO PROVIDE EASY ACCESSIBILITY FOR SERVICE.
17. PROVIDE WATER TEMPERATURE SENSOR PRIOR TO AHU COIL CONNECTION. SEE SHEET M5.0 FOR CONTROL INFORMATION.
18. RISE UP WITH PRE-HEATING WATER PIPING AT THIS LOCATION TO CLEAR AHU-15.



PENTHOUSE KEY PLAN
NOT TO SCALE
PLAN NORTH

FOR CONSTRUCTION

REVISIONS | DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 12/31 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

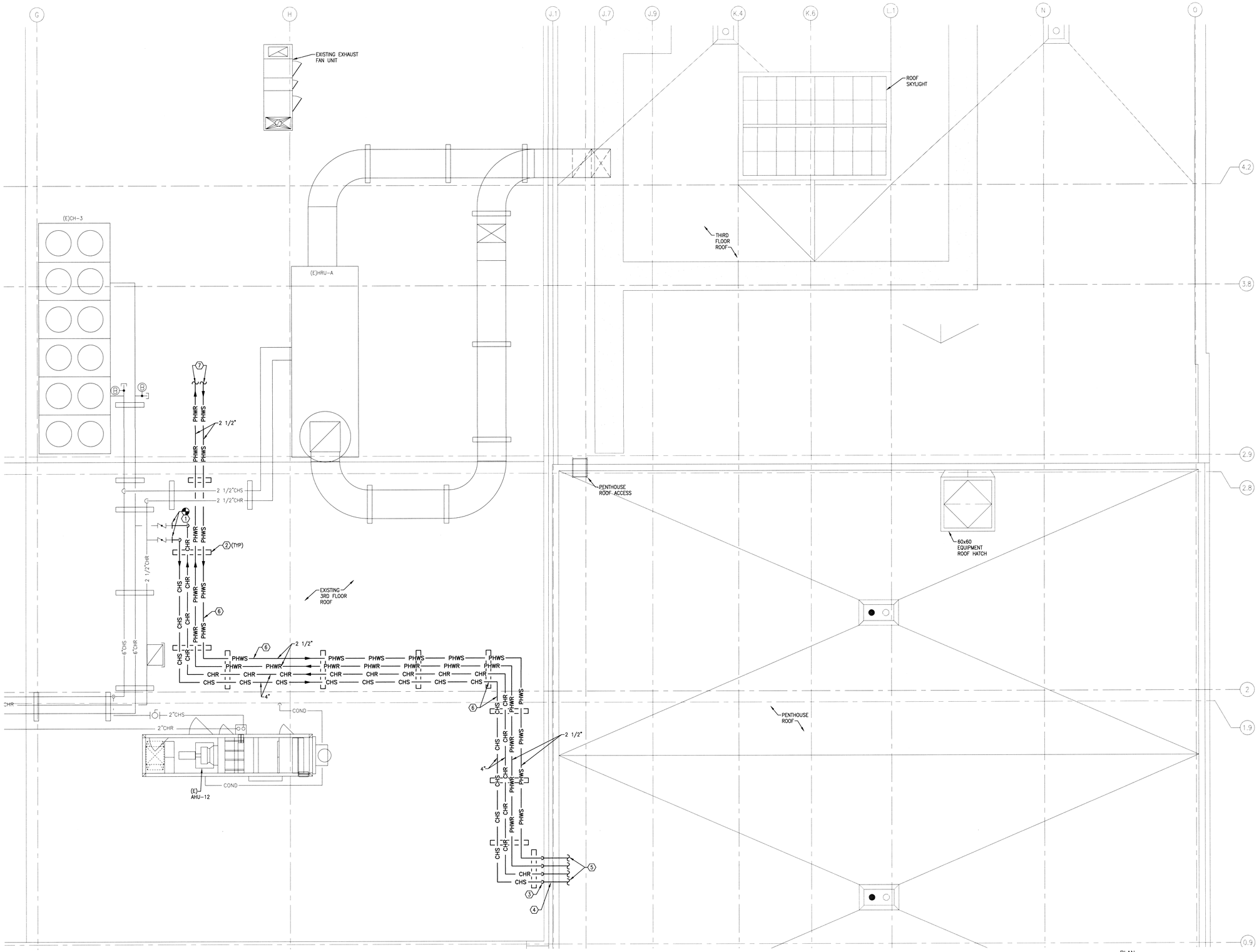
CAD FILE NAME: 531-317_M28
XREF FILE NAME: 85APH 85PPHHV 85MPHHV 531-317_xVAbord

DRAWING TITLE: PENTHOUSE MECHANICAL PIPING PLAN
APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE
APPROVED: MEDICAL CENTER DIRECTOR

PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT
BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA
LOCATION: VAMC BOISE, IDAHO

DATE: 11/01/2011
PROJECT NO.: 531-317
DRAWING NO.: M2.8
DWG 103 OF 188

DEPARTMENT OF VETERANS AFFAIRS



M2 BUILDING 85 – MECHANICAL ROOF PIPING PLAN
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES

A. THIS PROJECT WILL BE ACCOMPLISHED IN PHASES. THE CONTRACTOR IS TO ALLOW A MINIMUM OF 14 DAYS DOWN TIME BETWEEN EACH PHASE. THIS IS TO ALLOW THE MEDICAL CENTER TIME TO RELOCATE PERSONNEL, EQUIPMENT, AND FURNISHINGS. ALL WORK IN A GIVEN PHASE (INCLUDING ALL PUNCHLIST ITEMS) MUST BE COMPLETED PRIOR TO THE VA DOWN TIME. DOWN TIME IS INCLUDED IN THE OVERALL PROJECT SCHEDULE.

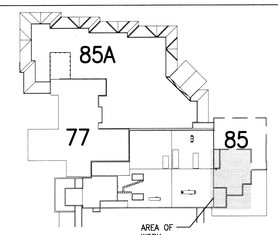
B. CONTRACTOR IS REQUIRED TO FOLLOW ALL OSHA REGULATIONS CONCERNING CONSTRUCTION. THE SUPERINTENDENT IS REQUIRED TO HAVE COMPLETED, AS A MINIMUM, OSHA'S 10-HOUR TRAINING AND BE KNOWLEDGEABLE OF GENERAL SAFETY REQUIREMENTS FOR CONFINED SPACES, FALL PROTECTION, PERSONAL PROTECTIVE EQUIPMENT, TRENCHING, SCAFFOLDING, CRANES, ELECTRICAL, ETC. APPLICABLE SUBCONTRACTORS ARE TO HAVE A COMPETENT PERSON ON SITE WHEN REQUIRED BY OSHA. IF ACCESSING A CONFINED SPACE, THE CONTRACTOR IS REQUIRED HAVE THEIR OWN CONFINED SPACE AIR MONITOR AND TO TEST THE AIR PRIOR TO ENTERING ANY CONFINED SPACE. IF THE CONTRACTOR MUST ENTER A SANITARY SEWER MANHOLE, IN ADDITION TO A CONFINED SPACE AIR MONITOR, THEY MUST HAVE PROPER OSHA RESCUE EQUIPMENT FOR A PERMIT REQUIRED CONFINED SPACE. WHERE IT IS NOT POSSIBLE FOR THE VA TO SHUTDOWN AN ELECTRICAL PANEL OR CIRCUIT, THE CONTRACTOR MUST PROVIDE AND USE THE APPROPRIATE SAFETY CLOTHING AND EQUIPMENT AS REQUIRED BY NFPA 70E. THE VA WILL BE MONITORING THE CONTRACTOR'S COMPLIANCE WITH OSHA REGULATIONS. FAILURE TO COMPLY IS GROUNDS FOR STOPPING WORK.

C. CONSTRUCTION FOR THIS PROJECT WILL TAKE PLACE IN BUILDINGS THAT REMAIN OCCUPIED BY HOSPITAL STAFF AND PATIENTS. DUST CONTROL, NOISE, AND VIBRATION ARE AREAS OF MAJOR CONCERN. THE CONTRACTOR WILL BE REQUIRED TO MAINTAIN AIR TIGHT DUST BARRIERS AND EXHAUST FANS DURING THE DURATION OF DUST PRODUCING WORK AS SPECIFIED AND DIRECTED BY THE RESIDENT ENGINEER. SEE SPECIFICATION, SECTION 01010, ARTICLE 1.6, ALTERATIONS, PARAGRAPH PROTECTION, FOR ADDITIONAL INFORMATION. WORK THAT CREATES EXCESSIVE NOISE AND/OR VIBRATIONS MUST BE CAREFULLY SCHEDULED AND COORDINATED WITH THE HOSPITAL. THERE WILL BE TIMES WHEN NOISE OR VIBRATION PRODUCING WORK WILL NOT BE ALLOWED AND IT WILL HAVE TO BE SCHEDULED FOR OTHER NON-CRITICAL TIMES.

D. REFERENCE SPECIFICATIONS FOR EXTERIOR PIPE INSULATION AND JACKET REQUIREMENTS.

SHEET KEYNOTES

1. CONNECT TO EXISTING CHILLED WATER SUPPLY AND RETURN WITH NEW AT THIS LOCATION.
2. SUPPORT PIPING ON ROOF 18" ABOVE ROOF DECK. SEE DETAIL 8/M6.2.
3. RISE UP ALONG PENTHOUSE EXTERIOR WALL WITH PIPING AND PROVIDE VERTICAL PIPING SUPPORT AT A MINIMUM OF 10'-0" ON CENTER.
4. PENETRATE PENTHOUSE EXTERIOR WALL WITH NEW PIPING AT THIS LOCATION. COORDINATE PENETRATION LOCATION WITH RELIEF AIR LOUVER AND HVAC WITHIN PENTHOUSE. SEE SHEET M2.3. SEAL WALL PENETRATIONS WEATHER TIGHT AND PROVIDE EXTERIOR WALL ESCUTCHEON AT PENETRATION.
5. SEE SHEET M2.8 FOR CONTINUATION OF PIPING.
6. CONTRACTOR SHALL COORDINATE NEW PIPE ROUTING WITH EXISTING AND PROJECT REMODEL CONDITIONS.
7. THIS CONTRACTOR SHALL VERIFY AND COORDINATE THE FINAL CONNECTION LOCATION OF THE PRE-HEATING WATER SUPPLY AND RETURN PIPING WITH THE NEW TIE-IN FOR THIS PROJECT WHICH IS BEING PROVIDED UNDER THE VA MODIFICATIONS TO SPECIALTY CARE TOWER HVAC SYSTEM PROJECT 531-308.



FIRST FLOOR KEY PLAN
NOT TO SCALE
PLAN NORTH

FOR CONSTRUCTION

REVISIONS | DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

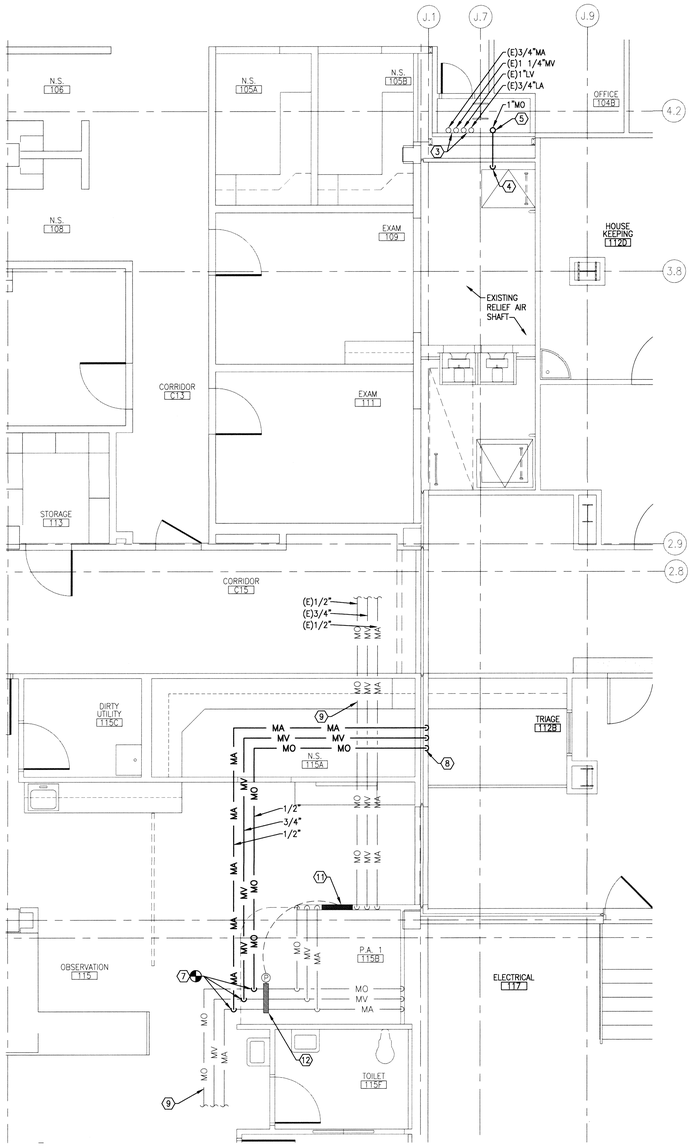
PROFESSIONAL ENGINEER REGISTERED 9436 10/31/11 STATE OF IDAHO KELLY WOODS

ZSA. Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317_P15
XREF FILE NAME: 85AR 85mRhv 531-317_xVAbord

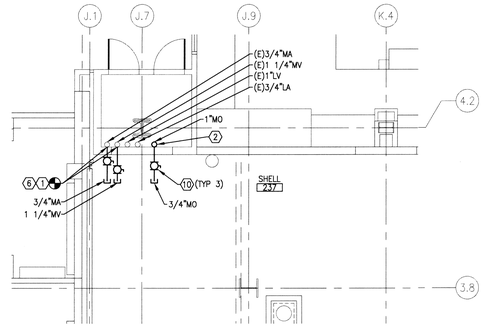
DRAWING TITLE: MECHANICAL ROOF PIPING PLAN
PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT
APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE
APPROVED: MEDICAL CENTER DIRECTOR
BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA
LOCATION: VAMC BOISE, IDAHO
DATE: 11/01/2011
PROJECT NO.: 531-317
DRAWING NO.: M2.9
DWG 104 OF 188

DEPARTMENT OF VETERANS AFFAIRS



M2 BUILDING 85 – FIRST FLOOR MEDICAL GAS PIPING PLAN
SCALE: 1/4" = 1'-0"

PLAN NORTH



M2 BUILDING 85 – SECOND FLOOR MEDICAL GAS PIPING PLAN
SCALE: 1/4" = 1'-0"

PLAN NORTH

GENERAL SHEET NOTES

A. THIS PROJECT WILL BE ACCOMPLISHED IN PHASES. THE CONTRACTOR IS TO ALLOW A MINIMUM OF 14 DAYS DOWN TIME BETWEEN EACH PHASE. THIS IS TO ALLOW THE MEDICAL CENTER TIME TO RELOCATE PERSONNEL, EQUIPMENT, AND FURNISHINGS. ALL WORK IN A GIVEN PHASE (INCLUDING ALL PUNCHLIST ITEMS) MUST BE COMPLETED PRIOR TO THE VA DOWN TIME. DOWN TIME IS INCLUDED IN THE OVERALL PROJECT SCHEDULE.

B. THE CEILING SPACE FROM THE BOTTOM OF THE CEILING GRID TO A MINIMUM OF 6" ABOVE THE BOTTOM OF THE CEILING GRID IS RESERVED FOR INSTALLATION OF CEILING MOUNTED ITEMS (I.E. LIGHT FIXTURES, SPEAKERS, DIFFUSERS). NO PIPING, DUCTWORK, CONDUITS, ETC., EXCEPT DROPS SERVING THE CEILING MOUNTED ITEMS, IS ALLOWED TO BE INSTALLED IN THIS SPACE, UNLESS OTHERWISE APPROVED BY THE RESIDENT ENGINEER.

C. CONTRACTOR IS REQUIRED TO FOLLOW ALL OSHA REGULATIONS CONCERNING CONSTRUCTION. THE SUPERINTENDENT IS REQUIRED TO HAVE COMPLETED, AS A MINIMUM, OSHA'S 10-HOUR TRAINING AND BE KNOWLEDGEABLE OF GENERAL SAFETY REQUIREMENTS FOR CONFINED SPACES, FALL PROTECTION, PERSONAL PROTECTIVE EQUIPMENT, TRENCHING, SCAFFOLDING, CRANES, ELECTRICAL, ETC. APPLICABLE SUBCONTRACTORS ARE TO HAVE A COMPETENT PERSON ON SITE WHEN REQUIRED BY OSHA. IF ACCESSING A CONFINED SPACE, THE CONTRACTOR IS REQUIRED HAVE THEIR OWN CONFINED SPACE AIR MONITOR AND TO TEST THE AIR PRIOR TO ENTERING ANY CONFINED SPACE. IF THE CONTRACTOR MUST ENTER A SANITARY SEWER MANHOLE, IN ADDITION TO A CONFINED SPACE AIR MONITOR, THEY MUST HAVE PROPER OSHA RESCUE EQUIPMENT FOR A PERMIT REQUIRED CONFINED SPACE. WHERE IT IS NOT POSSIBLE FOR THE VA TO SHUTDOWN AN ELECTRICAL PANEL OR CIRCUIT, THE CONTRACTOR MUST PROVIDE AND USE THE APPROPRIATE SAFETY CLOTHING AND EQUIPMENT AS REQUIRED BY NFPA 70E. THE VA WILL BE MONITORING THE CONTRACTOR'S COMPLIANCE WITH OSHA REGULATIONS. FAILURE TO COMPLY IS GROUNDS FOR STOPPING WORK.

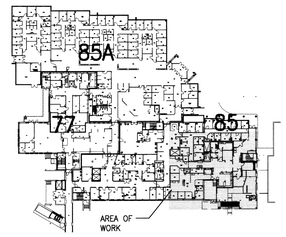
D. ALL PIPING IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD SUSPENDED CEILING.

E. ACCESS PANELS IN HARD SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS.

F. ROUTE ALL MEDICAL GAS PIPING BELOW HVAC. COORDINATE ROUTING AND PIPE ARRANGEMENT WITH HVAC CONTRACTOR.

SHEET KEYNOTES

1. CONNECT TO EXISTING 3/4" MEDICAL AIR AND 1 1/4" MEDICAL VACUUM AT THIS LOCATION PROVIDED AS PART OF THE SPECIALTY CARE TOWER PROJECT AND RISE UP TO THIRD FLOOR WITH NEW SERVICE. SEE SHEET M2.11A FOR CONTINUATION. FIELD VERIFY EXISTING RISER LOCATION AND COORDINATE SERVICE TIE-IN AND DOWNTIME WITH VA COTR.
2. 1" OXYGEN SERVICE UP FROM FIRST FLOOR AND CONTINUING UP TO THIRD FLOOR. SEE FIRST FLOOR MEDICAL GAS PIPING PLAN THIS SHEET AND SHEET M2.11A FOR CONTINUATION.
3. EXISTING 3/4" MEDICAL AIR, 1 1/4" MEDICAL VACUUM, 1" LAB VACUUM AND 3/4" LAB AIR UP FROM BASEMENT AND CONTINUING UP TO SECOND FLOOR. SEE SECOND FLOOR MEDICAL GAS PIPING PLAN THIS SHEET FOR CONTINUATION.
4. 1" NEW OXYGEN SERVICE UP FROM BASEMENT SEE SHEET M2.5A FOR CONTINUATION. COORDINATE RISER LOCATION WITH NEW RELIEF AIR PLENUM CONSTRUCTION.
5. RISE UP TO SECOND FLOOR WITH 1" OXYGEN PIPING. SEE SECOND FLOOR MEDICAL GAS PIPING PLAN THIS SHEET FOR CONTINUATION.
6. PROVIDE NEW MEDICAL AIR, MEDICAL VACUUM AND OXYGEN ROUGH-IN WITH ISOLATION VALVE AND CAP FOR FUTURE SECOND FLOOR EXPANSION.
7. CONNECT TO EXISTING MEDICAL AIR, MEDICAL VACUUM, AND OXYGEN SERVICE SERVING EXISTING EMERGENCY DEPARTMENT DOWNSTREAM OF EXISTING ZONE VALVE BOX ACROSS FROM EXISTING NURSE STATION. COORDINATE SERVICE TIE-IN WITH EMERGENCY DEPARTMENT AND VA COTR.
8. DROP DOWN AND PROVIDE NEW MEDICAL GAS OUTLET/INLET AT TRIAGE. SEE ARCHITECTURAL ELEVATIONS FOR LOCATION AND MOUNTING HEIGHT.
9. EXISTING MEDICAL GAS PIPING.
10. PROVIDE LOCKING ISOLATION BALL VALVES AND LOCK CLOSED. PROVIDE VALVE IDENTIFICATION PER VA COTR.
11. EXISTING MEDICAL GAS ZONE VALVE.
12. EXISTING MEDICAL GAS PRESSURE SENSORS.



FIRST FLOOR KEY PLAN
NOT TO SCALE

PLAN NORTH

PLAN NORTH 0 2' 4' 8'

FOR CONSTRUCTION

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317_M210

XREF FILE NAME: 85A1FL, 85P1MG, 85P2MG, 85A2FL

DRAWING TITLE: FIRST AND SECOND FLOOR MEDICAL GAS PIPING PLAN

PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT

APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE

APPROVED: MEDICAL CENTER DIRECTOR

BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA

LOCATION: VAMC BOISE, IDAHO

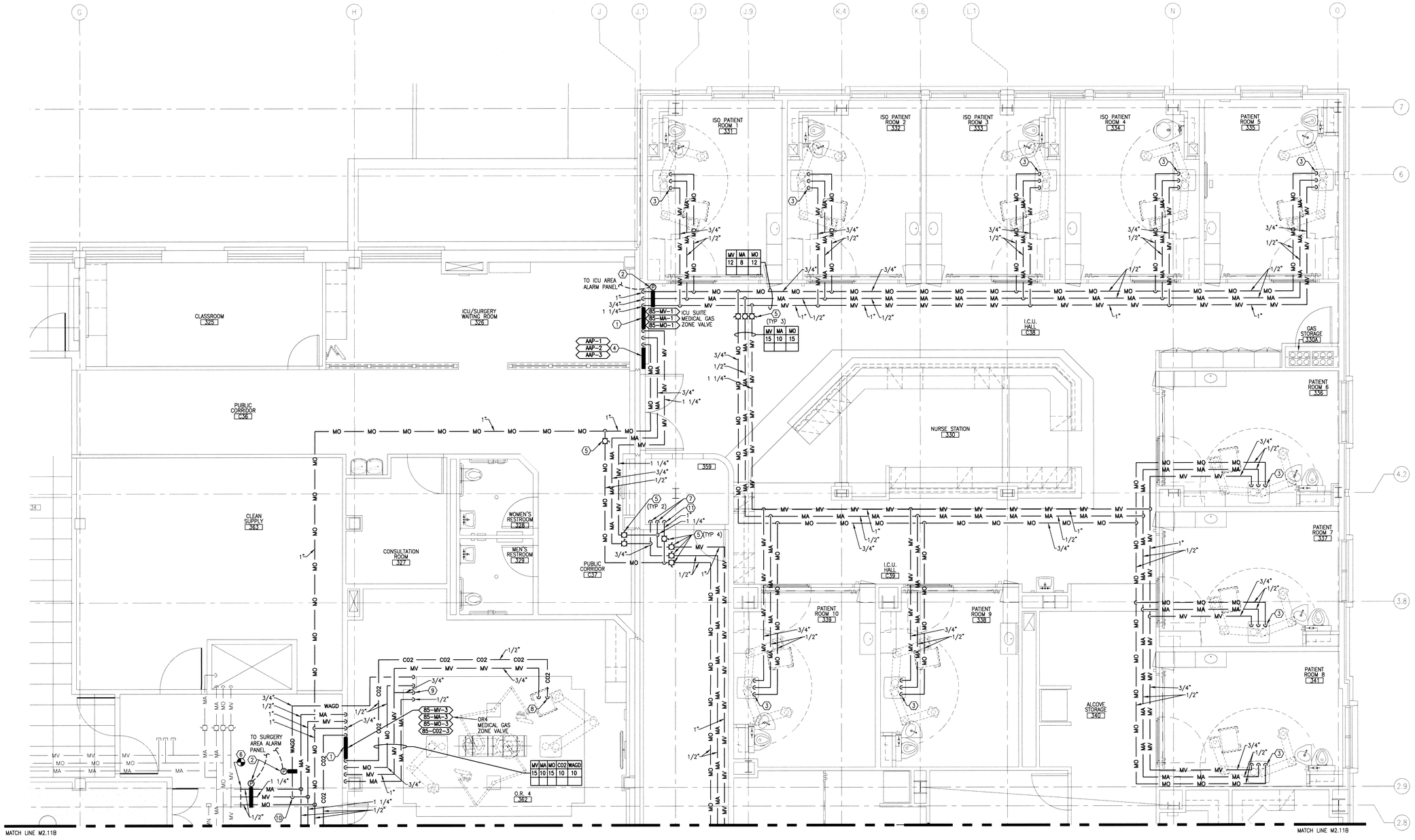
DATE: 11/01/2011

PROJECT NO.: 531-317

DRAWING NO.: M2.10

DWG 105 OF 188

DEPARTMENT OF VETERANS AFFAIRS



M2 BUILDING 85 – THIRD FLOOR MEDICAL GAS PIPING PLAN – AREA 'A'

SCALE: 1/4" = 1'-0"

PLAN NORTH 0 2' 4' 8'

GENERAL SHEET NOTES

A. THIS PROJECT WILL BE ACCOMPLISHED IN PHASES. THE CONTRACTOR IS TO ALLOW A MINIMUM OF 14 DAYS DOWN TIME BETWEEN EACH PHASE. THIS IS TO ALLOW THE MEDICAL CENTER TIME TO RELOCATE PERSONNEL, EQUIPMENT, AND FURNISHINGS. ALL WORK IN A GIVEN PHASE (INCLUDING ALL PUNCHLIST ITEMS) MUST BE COMPLETED PRIOR TO THE VA DOWN TIME. DOWN TIME IS INCLUDED IN THE OVERALL PROJECT SCHEDULE.

B. THE CEILING SPACE FROM THE BOTTOM OF THE CEILING GRID TO A MINIMUM OF 6" ABOVE THE BOTTOM OF THE CEILING GRID IS RESERVED FOR INSTALLATION OF CEILING MOUNTED ITEMS (I.E. LIGHT FIXTURES, SPEAKERS, DIFFUSERS). NO PIPING, DUCTWORK, CONDUITS, ETC., EXCEPT DROPS SERVING THE CEILING MOUNTED ITEMS, IS ALLOWED TO BE INSTALLED IN THIS SPACE, UNLESS OTHERWISE APPROVED BY THE RESIDENT ENGINEER.

C. CONTRACTOR IS REQUIRED TO FOLLOW ALL OSHA REGULATIONS CONCERNING CONSTRUCTION. THE SUPERINTENDENT IS REQUIRED TO HAVE COMPLETED, AS A MINIMUM, OSHA'S 10-HOUR TRAINING AND BE KNOWLEDGEABLE OF GENERAL SAFETY REQUIREMENTS FOR CONFINED SPACES, FALL PROTECTION, PERSONAL PROTECTIVE EQUIPMENT, TRENCHING, SCAFFOLDING, CRANES, ELECTRICAL, ETC. APPLICABLE SUBCONTRACTORS ARE TO HAVE A COMPETENT PERSON ON SITE WHEN REQUIRED BY OSHA. IF ACCESSING A CONFINED SPACE, THE CONTRACTOR IS REQUIRED HAVE THEIR OWN CONFINED SPACE AIR MONITOR AND TO TEST THE AIR PRIOR TO ENTERING ANY CONFINED SPACE. IF THE CONTRACTOR MUST ENTER A SANITARY SEWER MANHOLE, IN ADDITION TO A CONFINED SPACE AIR MONITOR, THEY MUST HAVE PROPER OSHA RESCUE EQUIPMENT FOR A PERMIT REQUIRED CONFINED SPACE. WHERE IT IS NOT POSSIBLE FOR THE VA TO SHUTDOWN AN ELECTRICAL PANEL OR CIRCUIT, THE CONTRACTOR MUST PROVIDE AND USE THE APPROPRIATE SAFETY CLOTHING AND EQUIPMENT AS REQUIRED BY NFPA 70E. THE VA WILL BE MONITORING THE CONTRACTOR'S COMPLIANCE WITH OSHA REGULATIONS. FAILURE TO COMPLY IS GROUNDS FOR STOPPING WORK.

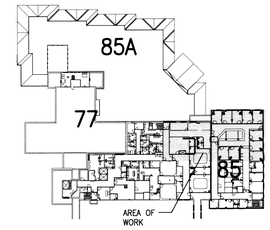
D. ALL PIPING IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD SUSPENDED CEILING.

E. ACCESS PANELS IN HARD SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS.

F. ROUTE ALL MEDICAL GAS PIPING BELOW HVAC. COORDINATE ROUTING AND PIPE ARRANGEMENT WITH HVAC CONTRACTOR.

SHEET KEYNOTES

1. LOCATION OF MEDICAL GAS ZONE VALVE ASSEMBLY. COORDINATE LOCATION AND MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS. SEE DETAIL 4/M6.2.
2. MEDICAL GAS REMOTE PRESSURE SENSORS (TYP 3). LOCATE REMOTE PRESSURE SENSORS IN ACCESSIBLE AREA IN CORRIDOR AND RUN WIRING TO ASSOCIATED REMOTE AREA ALARM PANEL.
3. DROP DOWN FROM ABOVE TO GAS COLUMN WITH MEDICAL GASES. COORDINATE MEDICAL GAS CONNECTION LOCATION WITH EQUIPMENT SUPPLIED. MEDICAL GAS SIZES TO COLUMN BASED ON 3 OXYGEN, 3 MEDICAL VACUUM AND 2 MEDICAL AIR OUTLETS/INLETS TO BE SUPPLIED ON GAS COLUMN.
4. ICU, PACU, AND SURGERY AREA ALARM PANEL LOCATIONS. COORDINATE LOCATION WITH ARCHITECTURAL DRAWINGS. SEE MEDICAL GAS AREA ALARM PANEL SCHEDULE ON SHEET M0.3 FOR TECHNICAL AND DESIGN BASIS INFORMATION.
5. PROVIDE INTERMEDIATE GAS ISOLATION VALVES AND LOCATE AND COORDINATE WITH HVAC TO PROVIDE EASY ACCESSIBILITY FOR SERVICE FROM HALL/CORRIDOR. PROVIDE VALVE TAG IDENTIFICATION PER VA COTR AND LOCK VALVE IN OPEN POSITION.
6. CONNECT TO EXISTING MEDICAL GASES WITH NEW AT THIS LOCATION.
7. 3/4" MEDICAL AIR AND 1 1/4" MEDICAL VACUUM UP FROM FLOOR BELOW SEE SHEET M2.10 FOR CONTINUATION.
8. DROP DOWN TO OPERATING ROOM EQUIPMENT BOOM WITH MEDICAL VACUUM AND CARBON DIOXIDE GASES. COORDINATE MEDICAL GAS CONNECTION LOCATION WITH EQUIPMENT SUPPLIED. MEDICAL GAS SIZES TO EQUIPMENT BOOM BASED ON 1 MEDICAL VACUUM AND 1 CARBON DIOXIDE OUTLET/INLET PROVIDED ON EQUIPMENT BOOM.
9. DROP DOWN TO ANESTHESIA BOOM WITH MEDICAL VACUUM, OXYGEN, WASTE ANESTHESIA GAS, AND MEDICAL AIR GASES. COORDINATE MEDICAL GAS CONNECTION LOCATION WITH EQUIPMENT SUPPLIED. MEDICAL GAS SIZES TO ANESTHESIA BOOM BASED ON 2 MEDICAL VACUUM, 2 OXYGEN, 1 WASTE ANESTHESIA GAS, AND 1 MEDICAL AIR OUTLET/INLET PROVIDED ON ANESTHESIA BOOM.
10. CONNECT WASTE ANESTHESIA GAS DISPOSAL TO MEDICAL VACUUM AT THIS LOCATION.
11. 1" OXYGEN LINE UP FROM FLOOR BELOW. SEE SHEET M2.10 FOR CONTINUATION.



THIRD FLOOR KEY PLAN
NOT TO SCALE

PLAN NORTH

FOR CONSTRUCTION

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317_M211A
XREF FILE NAME: 85A3FL 85P3MG 531-317_xVAbord

DRAWING TITLE: THIRD FLOOR MEDICAL GAS PIPING PLAN AREA 'A'

APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE

APPROVED: MEDICAL CENTER DIRECTOR

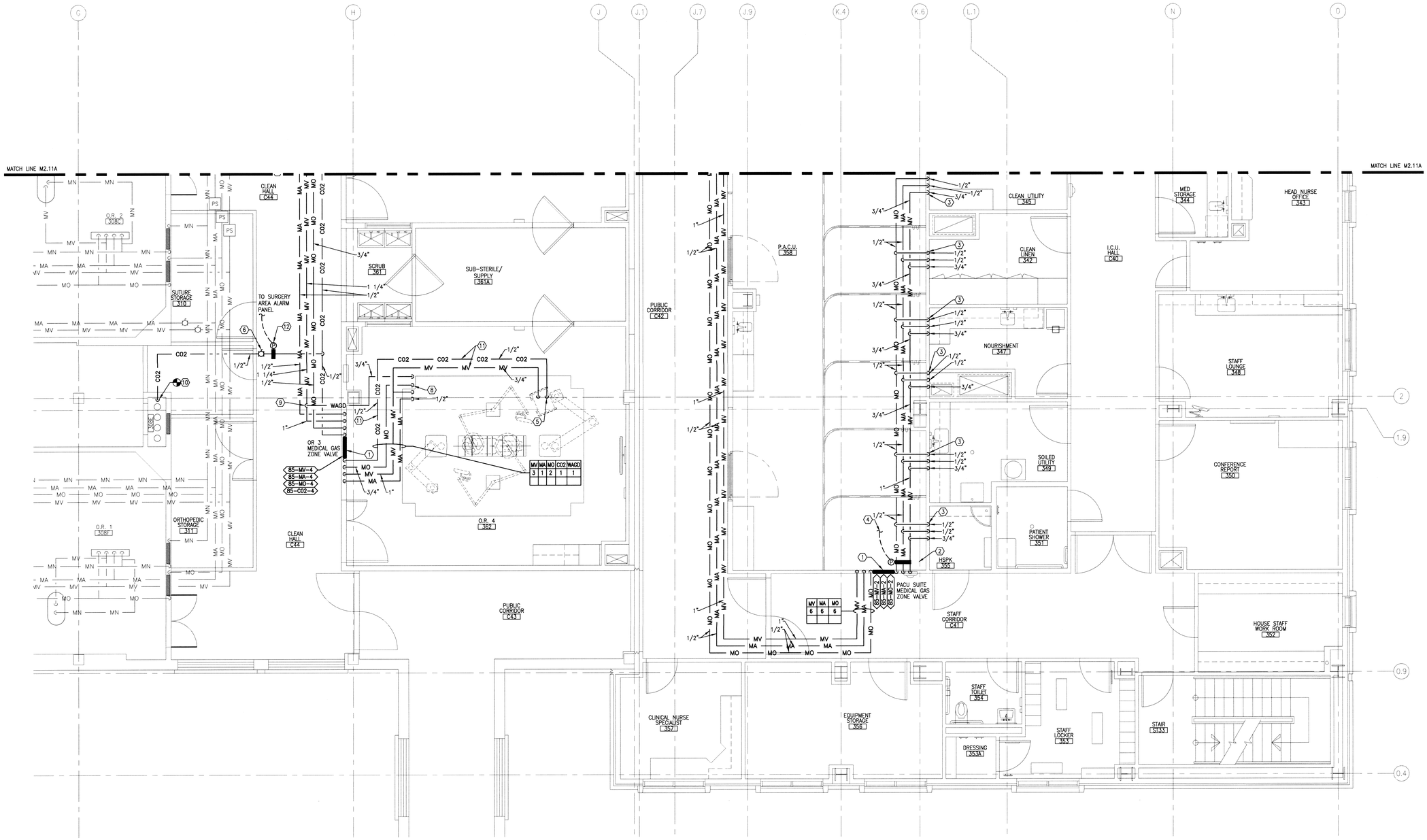
PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT

BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA

LOCATION: VAMC BOISE, IDAHO

DATE: 11/01/2011
PROJECT NO.: 531-317
DRAWING NO.: M2.11A
DWG 106 OF 188

DEPARTMENT OF VETERANS AFFAIRS



M2 BUILDING 85 – THIRD FLOOR MEDICAL GAS PIPING PLAN – AREA 'B'
SCALE: 1/4" = 1'-0"

GENERAL SHEET NOTES

A. THIS PROJECT WILL BE ACCOMPLISHED IN PHASES. THE CONTRACTOR IS TO ALLOW A MINIMUM OF 14 DAYS DOWN TIME BETWEEN EACH PHASE. THIS IS TO ALLOW THE MEDICAL CENTER TIME TO RELOCATE PERSONNEL, EQUIPMENT, AND FURNISHINGS. ALL WORK IN A GIVEN PHASE (INCLUDING ALL PUNCHLIST ITEMS) MUST BE COMPLETED PRIOR TO THE VA DOWN TIME. DOWN TIME IS INCLUDED IN THE OVERALL PROJECT SCHEDULE.

B. THE CEILING SPACE FROM THE BOTTOM OF THE CEILING GRID TO A MINIMUM OF 6" ABOVE THE BOTTOM OF THE CEILING GRID IS RESERVED FOR INSTALLATION OF CEILING MOUNTED ITEMS (I.E. LIGHT FIXTURES, SPEAKERS, DIFFUSERS). NO PIPING, DUCTWORK, CONDUITS, ETC., EXCEPT DROPS SERVING THE CEILING MOUNTED ITEMS, IS ALLOWED TO BE INSTALLED IN THIS SPACE, UNLESS OTHERWISE APPROVED BY THE RESIDENT ENGINEER.

C. CONTRACTOR IS REQUIRED TO FOLLOW ALL OSHA REGULATIONS CONCERNING CONSTRUCTION. THE SUPERINTENDENT IS REQUIRED TO HAVE COMPLETED, AS A MINIMUM, OSHA'S 10-HOUR TRAINING AND BE KNOWLEDGEABLE OF GENERAL SAFETY REQUIREMENTS FOR CONFINED SPACES, FALL PROTECTION, PERSONAL PROTECTIVE EQUIPMENT, TRENCHING, SCAFFOLDING, CRANES, ELECTRICAL, ETC. APPLICABLE SUBCONTRACTORS ARE TO HAVE A COMPETENT PERSON ON SITE WHEN REQUIRED BY OSHA. IF ACCESSING A CONFINED SPACE, THE CONTRACTOR IS REQUIRED HAVE THEIR OWN CONFINED SPACE AIR MONITOR AND TO TEST THE AIR PRIOR TO ENTERING ANY CONFINED SPACE. IF THE CONTRACTOR MUST ENTER A SANITARY SEWER MANHOLE, IN ADDITION TO A CONFINED SPACE AIR MONITOR, THEY MUST HAVE PROPER OSHA RESCUE EQUIPMENT FOR A PERMIT REQUIRED CONFINED SPACE. WHERE IT IS NOT POSSIBLE FOR THE VA TO SHUTDOWN AN ELECTRICAL PANEL OR CIRCUIT, THE CONTRACTOR MUST PROVIDE AND USE THE APPROPRIATE SAFETY CLOTHING AND EQUIPMENT AS REQUIRED BY NFPA 70E. THE VA WILL BE MONITORING THE CONTRACTOR'S COMPLIANCE WITH OSHA REGULATIONS. FAILURE TO COMPLY IS GROUNDS FOR STOPPING WORK.

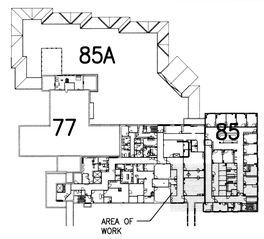
D. ALL PIPING IN FINISHED ROOMS OR SPACES SHALL BE CONCEALED IN A FURRED CHASE OR ABOVE THE HARD SUSPENDED CEILING.

E. ACCESS PANELS IN HARD SUSPENDED CEILINGS ARE REQUIRED FOR ALL VALVES, ACCESS PANELS SHALL BE FURNISHED AND INSTALLED UNDER THE ARCHITECTURAL SPECIFICATIONS.

F. ROUTE ALL MEDICAL GAS PIPING BELOW HVAC. COORDINATE ROUTING AND PIPE ARRANGEMENT WITH HVAC CONTRACTOR.

SHEET KEYNOTES

1. LOCATION OF MEDICAL GAS ZONE VALVE ASSEMBLY. COORDINATE LOCATION AND MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS. SEE DETAIL 4/M6.2.
2. MEDICAL GAS REMOTE PRESSURE SENSORS. LOCATE REMOTE PRESSURE SENSORS IN ACCESSIBLE AREA IN CORRIDOR AND RUN WIRING TO ASSOCIATED REMOTE AREA ALARM PANEL.
3. DROP DOWN FROM ABOVE INSIDE WALL TO MEDICAL GAS WALL OUTLET. COORDINATE LOCATION WITH ARCHITECTURAL DRAWINGS. MEDICAL GAS SIZES TO WALL OUTLETS BASED ON 1 OXYGEN, 1 MEDICAL AIR AND 1 MEDICAL VACUUM OUTLET/INLET.
4. TO PACU AREA ALARM PANEL IN ICU DEPARTMENT. SEE SHEET M2.11A FOR LOCATION.
5. DROP DOWN TO OPERATING ROOM EQUIPMENT BOOM WITH MEDICAL VACUUM AND CARBON DIOXIDE GASES. COORDINATE MEDICAL GAS CONNECTION LOCATION WITH EQUIPMENT SUPPLIED. MEDICAL GAS SIZES TO EQUIPMENT BOOM BASED ON 1 MEDICAL VACUUM AND 1 CARBON DIOXIDE OUTLET/INLET PROVIDED ON EQUIPMENT BOOM.
6. PROVIDE INTERMEDIATE GAS ISOLATION VALVES AND LOCATE AND COORDINATE WITH HVAC TO PROVIDE EASY ACCESSIBILITY FOR SERVICE FROM HALL/CORRIDOR. PROVIDE VALVE TAG IDENTIFICATION PER VA COTR AND LOCK VALVE IN OPEN POSITION.
7. 3/4" MEDICAL AIR AND 1 1/4" MEDICAL VACUUM UP FROM FLOOR BELOW SEE SHEET M2.10 FOR CONTINUATION.
8. DROP DOWN TO ANESTHESIA BOOM WITH MEDICAL VACUUM, OXYGEN, WASTE ANESTHESIA GAS, AND MEDICAL AIR GASES. COORDINATE MEDICAL GAS CONNECTION LOCATION WITH EQUIPMENT SUPPLIED. MEDICAL GAS SIZES TO ANESTHESIA BOOM BASED ON 2 MEDICAL VACUUM, 2 OXYGEN, 1 WASTE ANESTHESIA GAS, AND 1 MEDICAL AIR OUTLET/INLET PROVIDED ON ANESTHESIA BOOM.
9. CONNECT WASTE ANESTHESIA GAS DISPOSAL TO MEDICAL VACUUM AT THIS LOCATION.
10. CONNECT TO EXISTING CARBON DIOXIDE MANIFOLD SYSTEM AT THIS LOCATION. COORDINATE DOWNTIME WITH VA COTR.
11. ROUTE MEDICAL GAS PIPING AROUND PERIMETER OF STERILE FIELD. COORDINATE ROUTING WITH HVAC.
12. TO SURGERY AREA ALARM PANEL IN ICU DEPARTMENT. SEE SHEET M2.11A.



THIRD FLOOR KEY PLAN
NOT TO SCALE
PLAN NORTH

FOR CONSTRUCTION

REVISIONS | DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

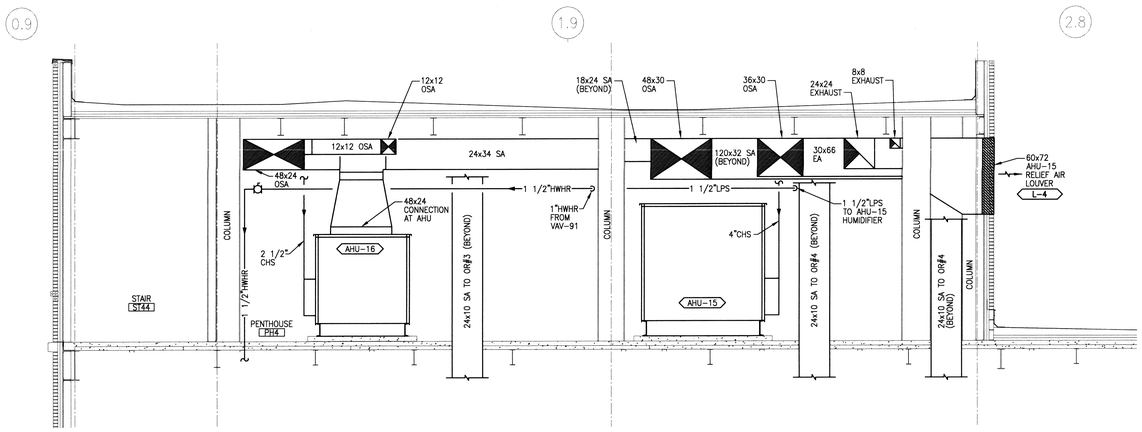
CAD FILE NAME: 531-317_M211B
XREF FILE NAME: 85A3FL 85M3HV 85P3MG 531-317_xVAbord

DRAWING TITLE: THIRD FLOOR MEDICAL GAS PIPING PLAN AREA 'B'
APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE
APPROVED: MEDICAL CENTER DIRECTOR

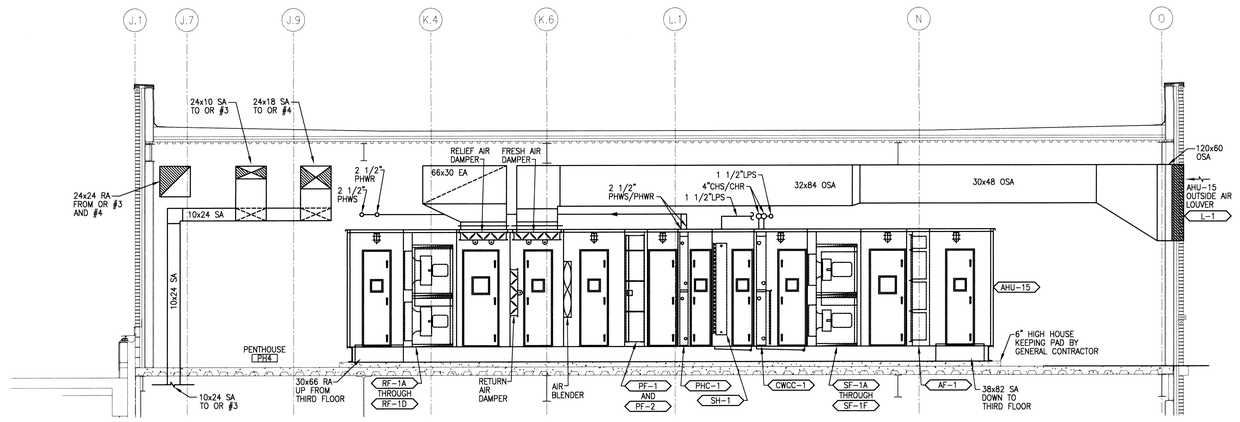
PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT
BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA
LOCATION: VAMC BOISE, IDAHO

DATE: 11/01/2011
PROJECT NO.: 531-317
DRAWING NO.: M2.11B
DWG 107 OF 188

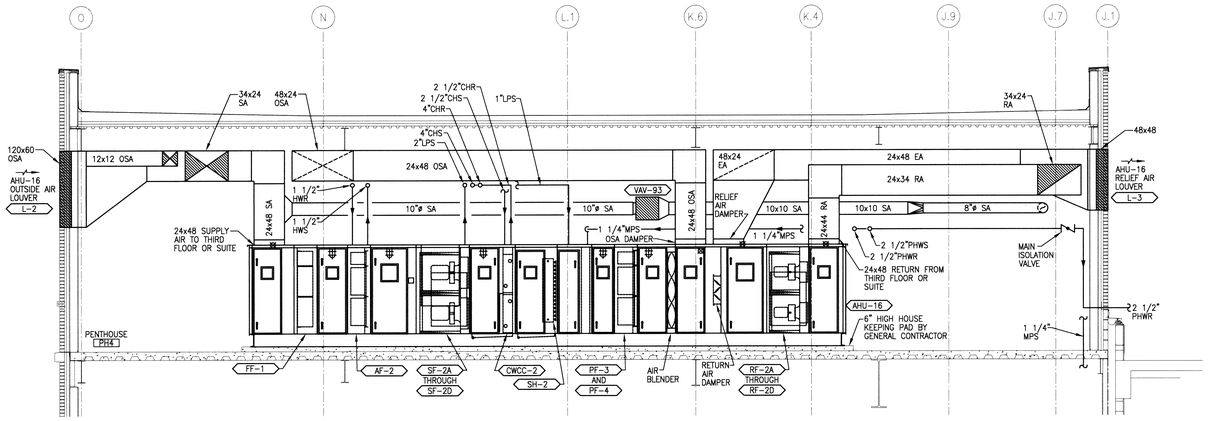
DEPARTMENT OF VETERANS AFFAIRS



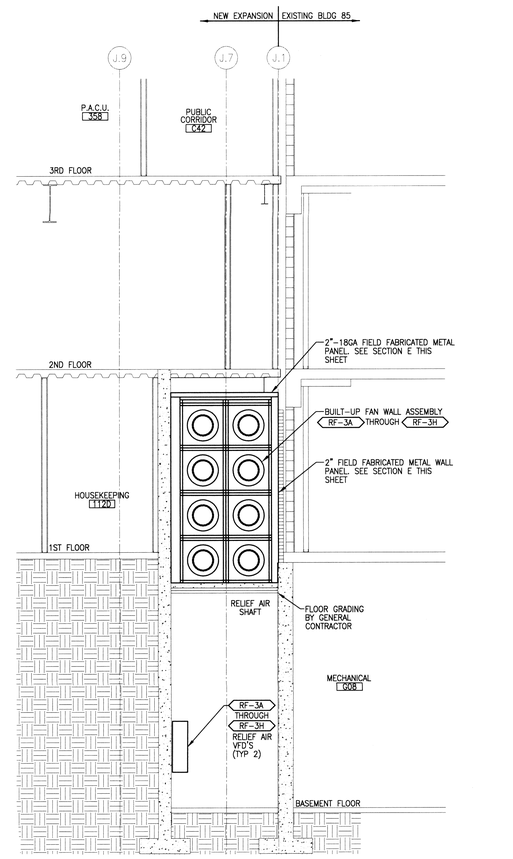
A MECHANICAL PENTHOUSE SECTION
SCALE: 1/4" = 1'-0"



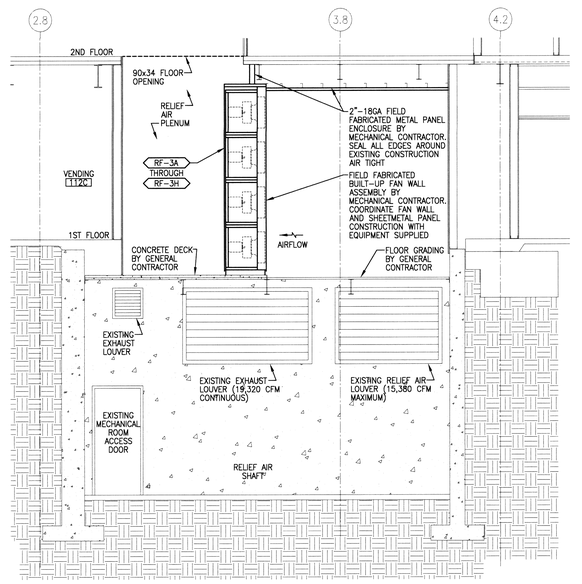
B MECHANICAL PENTHOUSE SECTION
SCALE: 1/4" = 1'-0"



C MECHANICAL PENTHOUSE SECTION
SCALE: 1/4" = 1'-0"



D AHU-2 RELIEF AIR SHAFT SECTION
SCALE: 1/4" = 1'-0"



E AHU-2 RELIEF AIR SHAFT SECTION
SCALE: 1/4" = 1'-0"

FOR CONSTRUCTION

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317_M30
XREF FILE NAME: 85MPHHV 531-317_xVAbord

DRAWING TITLE: MECHANICAL SECTIONS

PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT

APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE

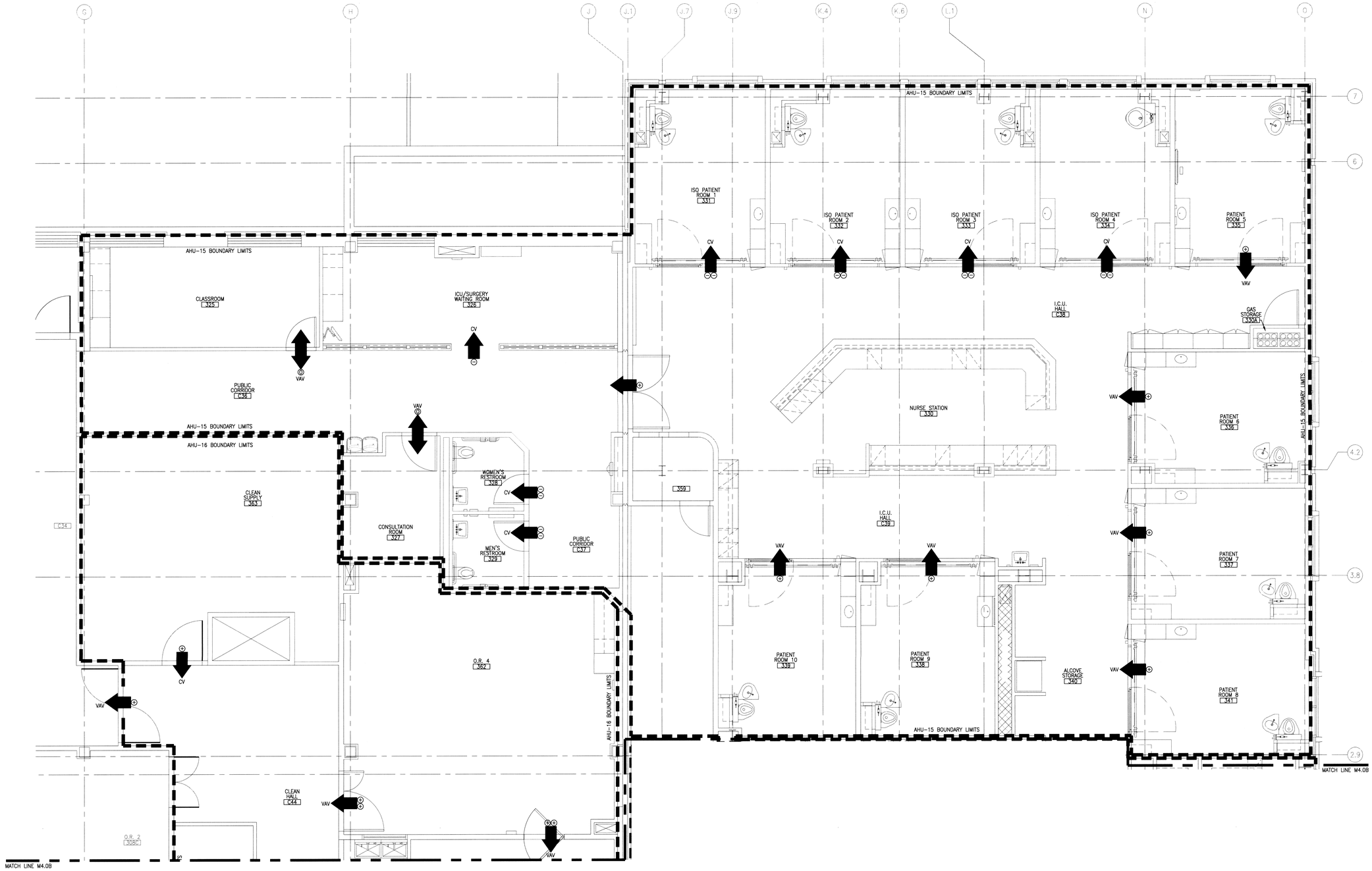
APPROVED: MEDICAL CENTER DIRECTOR

BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA

LOCATION: VAMC BOISE, IDAHO

DATE: 11/01/2011
PROJECT NO.: 531-317
DRAWING NO.: M3.0
DWG 108 OF 188

DEPARTMENT OF VETERANS AFFAIRS

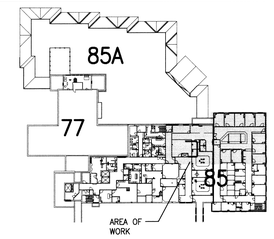


M4 BUILDING 85 – THIRD FLOOR HVAC AIRFLOW PLAN – AREA 'A'
SCALE: 1/4" = 1'-0"

PLAN NORTH 0 2' 4' 8'

SHEET LEGEND

- AIRFLOW DIRECTION WITH RELATION TO ADJOINING SPACES
- ⊕ POSITIVE – AIRFLOW MAINTAINED AT A MINIMUM OFFSET OF 15% GREATER THAN RETURN OR EXHAUST AIR VOLUME
- ⊕⊕ POSITIVE – AIRFLOW MAINTAINED AT A MINIMUM OFFSET OF 30% GREATER THAN RETURN OR EXHAUST AIR VOLUME
- ⊖ NEGATIVE – EXHAUST AIRFLOW MAINTAINED AT A MINIMUM OFFSET OF 15% GREATER THAN SUPPLY AIR VOLUME
- ⊖⊖ NEGATIVE – EXHAUST AIRFLOW MAINTAINED AT A MINIMUM OFFSET OF 30% GREATER THAN SUPPLY AIR VOLUME
- Ⓝ NEUTRAL – RETURN OR EXHAUST AIRFLOW EQUAL TO SUPPLY AIR VOLUME



THIRD FLOOR KEY PLAN
NOT TO SCALE
PLAN NORTH

FOR CONSTRUCTION

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 3/31/11 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

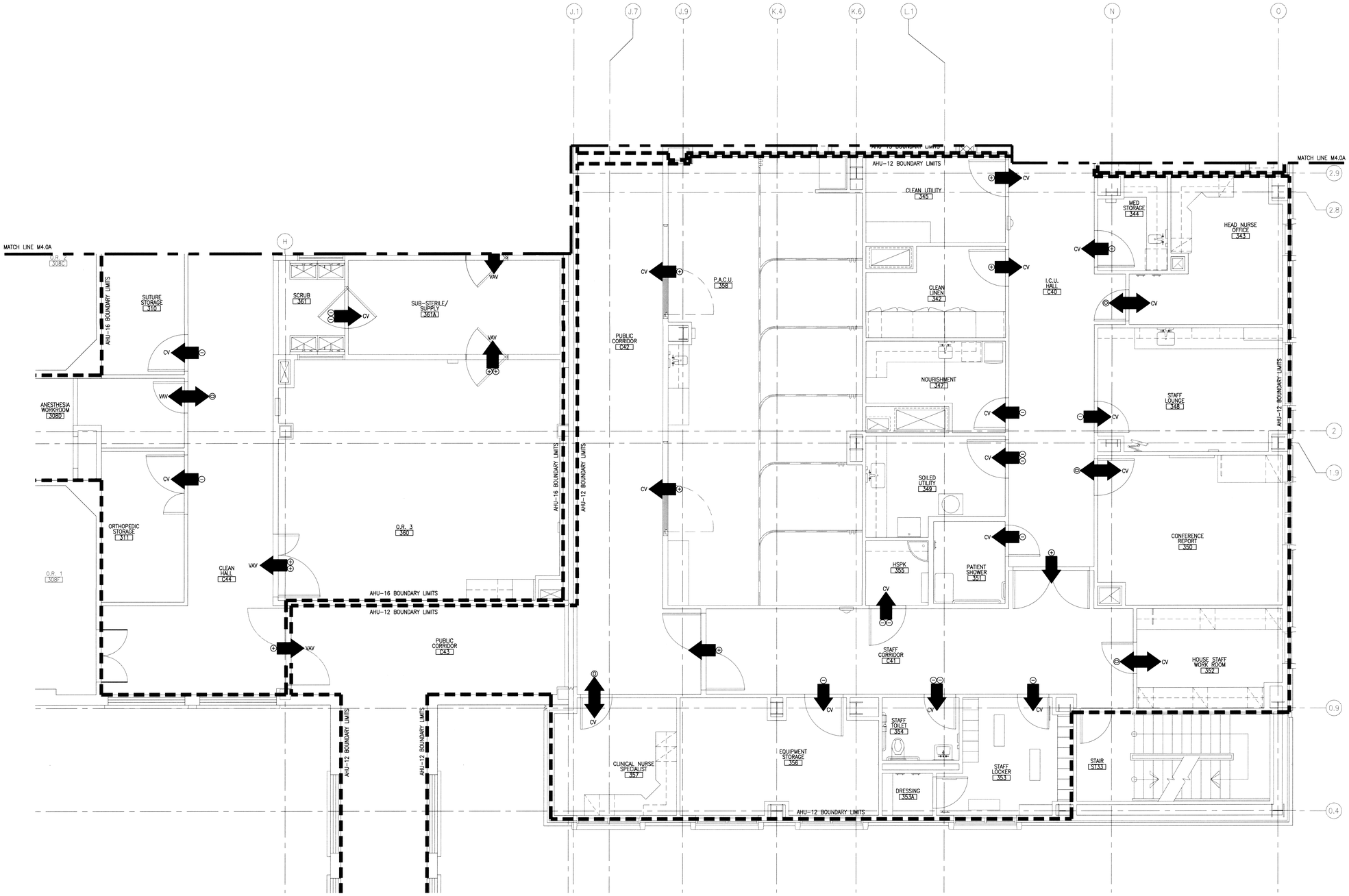
CAD FILE NAME: 531-317_M40A
XREF FILE NAME: 85A3FL 85M3AIR 531-317_xVAbord

DRAWING TITLE: THIRD FLOOR HVAC AIRFLOW PLAN AREA 'A'
APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE
APPROVED: MEDICAL CENTER DIRECTOR

PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT
BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA
LOCATION: VAMC BOISE, IDAHO

DATE: 11/01/2011
PROJECT NO.: 531-317
DRAWING NO.: M4.0A
DWG 109 OF 188

DEPARTMENT OF VETERANS AFFAIRS

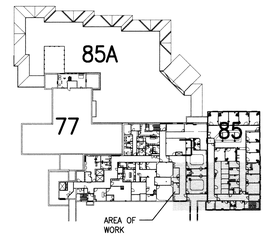


PLAN NORTH 0 2' 4' 8'

M4 BUILDING 85 – THIRD FLOOR HVAC AIRFLOW PLAN – AREA 'B'
SCALE: 1/4" = 1'-0"

SHEET LEGEND

- AIRFLOW DIRECTION WITH RELATION TO ADJOINING SPACES
- ⊕ POSITIVE – AIRFLOW MAINTAINED AT A MINIMUM OFFSET OF 15% GREATER THAN RETURN OR EXHAUST AIR VOLUME
- ⊕⊕ POSITIVE – AIRFLOW MAINTAINED AT A MINIMUM OFFSET OF 30% GREATER THAN RETURN OR EXHAUST AIR VOLUME
- ⊖ NEGATIVE – EXHAUST AIRFLOW MAINTAINED AT A MINIMUM OFFSET OF 15% GREATER THAN SUPPLY AIR VOLUME
- ⊖⊖ NEGATIVE – EXHAUST AIRFLOW MAINTAINED AT A MINIMUM OFFSET OF 30% GREATER THAN SUPPLY AIR VOLUME
- Ⓝ NEUTRAL – RETURN OR EXHAUST AIRFLOW EQUAL TO SUPPLY AIR VOLUME



THIRD FLOOR KEY PLAN
NOT TO SCALE
PLAN NORTH

FOR CONSTRUCTION

REVISIONS | DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 10/31 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME:
531-317_M40B

XREF FILE NAME:
85A3FL
85M3AIR
531-317_xVAbord

DRAWING TITLE
THIRD FLOOR HVAC AIRFLOW PLAN AREA 'B'

APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE

APPROVED: MEDICAL CENTER DIRECTOR

PROJECT TITLE
REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT

BUILDING NUMBER 85 | CHECKED JB | DRAWN JA

LOCATION VAMC BOISE, IDAHO

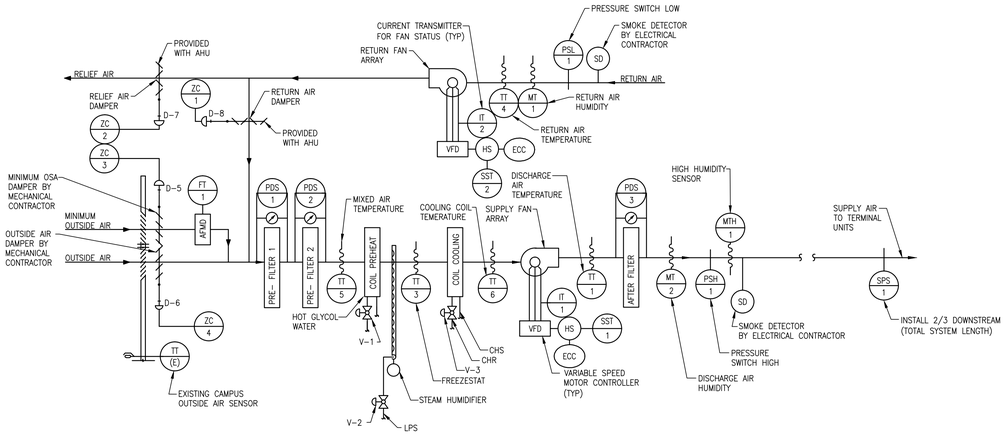
DATE 11/01/2011

PROJECT NO. 531-317

DRAWING NO. M4.0B

DWG 110 OF 188

DEPARTMENT OF VETERANS AFFAIRS



SEQUENCE OF OPERATION FOR AHU-15 (ICU/EMERGENCY UNIT)

1. GENERAL

1.1 SUPPLY FANS SHALL BE STARTED AND STOPPED MANUALLY FROM THE DDC GRAPHIC SCREEN AND RUN CONTINUOUSLY WHENEVER THE H-O-A IS IN THE AUTO POSITION AND MANUALLY STARTED OR STOPPED BY THE HAND POSITION. RETURN FANS SHALL START ON PROOF OF OPERATION OF SUPPLY FANS. WHEN THE AIR HANDLER IS "OFF", MINIMUM OSA, RELIEF AIR AND OSA DAMPERS SHALL BE FULLY CLOSED. UPON A SIGNAL TO START MINIMUM OSA DAMPER SHALL FULLY OPEN, OUTSIDE AIR DAMPER, RELIEF AIR DAMPER AND RETURN AIR DAMPER SHALL FULLY OPEN AND THEN MODULATE TO MAINTAIN MIXED AIR TEMPERATURE SETPOINT (ADJ), (3°F BELOW DISCHARGE AIR TEMPERATURE SETPOINT)(ADJ). THE INITIAL DISCHARGE TEMPERATURE SHALL BE SET FOR 55°F. THE DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE ADJUSTED BETWEEN 55°F AND 60°F (ADJ) BASED ON THE AVERAGE COOLING SIGNAL FROM THE VARIABLE AIR AND CONSTANT VOLUME BOXES SERVED BY THE AIR HANDLING UNIT.

2. TEMPERATURE CONTROL

MIXED AIR TEMPERATURE CONTROL:

2.1 THE CONTROL SYSTEM SHALL MODULATE THE OUTSIDE, RETURN AND RELIEF DAMPERS TO MAINTAIN THE MIXED AIR TEMPERATURE AT THE CURRENT SET POINT WHICH SHALL BE THE CURRENT DISCHARGE AIR TEMPERATURE SET POINT MINUS AN ADJUSTABLE OFFSET (INITIALLY 3°F ADJ).

2.2 IF THE SYSTEM CANNOT MAINTAIN THE MIXED AIR SETPOINT USING THE ECONOMIZER DAMPERS, (OUTSIDE AIR DAMPER, RETURN AIR DAMPER AND RELIEF AIR DAMPER) THE DDC SYSTEM SHALL MODULATE THE HOT WATER PREHEAT VALVE OR CHILLED WATER VALVE TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT (ADJ). PRIOR TO MODULATING THE HOT WATER VALVE, THE MODULATING OUTSIDE AIR DAMPER SHALL BE FULLY CLOSED, RELIEF AIR MODULATING DAMPER SHALL BE SET TO THE MINIMUM POSITION AND THE RETURN AIR DAMPER SHALL BE SET OPEN SO THAT THE PERCENTAGE OF RETURN AIR SHALL BE EQUAL TO 100% MINUS THE RELIEF AIR FLOW REQUIREMENT. PRIOR TO MODULATING THE CHILLED WATER VALVE WHILE ECONOMIZING, THE ECONOMIZER DAMPERS SHALL BE FULLY OPEN. IF THE ECONOMIZER DAMPERS ARE LESS THAN FULLY OPEN, THE CHILLED WATER VALVE SHALL NOT BE ALLOWED TO OPEN. THE ECONOMIZER CYCLE SHALL BE LOCKED OUT ANYTIME THAT THE OUTSIDE AIR TEMPERATURE IS GREATER THAN THE AIR HANDLER RETURN AIR TEMPERATURE. ECONOMIZER DAMPERS SHALL BE SET TO MINIMUM SETTINGS AND THE CHILLED WATER VALVE SHALL MODULATE TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT.

ECONOMIZER INTERLOCK:

2.3 THE RETURN AIR DAMPER SHALL BE SET TO 100% RETURN AIR ANYTIME THE FANS ARE NOT IN OPERATION. WHEN THE FANS ARE IN OPERATION, THE MINIMUM OUTSIDE AIR DAMPER SHALL ALWAYS BE OPEN AND THE CONTROL SYSTEM SHALL MONITOR THE FLOW OF OUTDOOR AIR. THE MINIMUM DESIGN AIRFLOW REQUIREMENT SHALL ALWAYS BE MET VIA THE MINIMUM OSA DAMPER.

3. AIR FLOW CONTROL

3.1 THE SUPPLY AIR FLOW SHALL BE CONTROLLED BY DDC SYSTEM AND SUPPLY FAN VARIABLE SPEED MOTOR CONTROLLER TO MAINTAIN 1.5" OF DUCT STATIC PRESSURE (FIELD ADJUSTABLE).

3.2 EACH SET OF FANS (SUPPLY AND RETURN) HAVE A LEAD VFD AND A BACKUP VFD. IF LEAD VFD FAILS, TEMTROL CONTROL CIRCUIT SHALL DE-ENERGIZE LEAD VFD CONTACTOR, ENERGIZE BACKUP VFD CONTACTOR, AND START BACKUP VFD. OPERATOR RESETS FAILED VFD LOCKOUT MANUALLY AT THE TEMTROL CONTROL PANEL. THE DDC SYSTEM SHALL MODULATE THE FAN VFD TO MAINTAIN AIRFLOW. THE CONTROL SYSTEM SHALL AUTOMATICALLY SWITCH THE LEAD VFD BASED ON A 7 DAY INTERVAL SCHEDULE (ADJ).

3.3 USING HIGH PRESSURE SENSOR LOCATED AT THE SUPPLY FAN DISCHARGE, SHALL PREVENT THE SUPPLY FAN FROM DEVELOPING OVER 3" [75mm] OF STATIC PRESSURE (FIELD ADJUSTABLE). IF STATIC PRESSURE DOES EXCEED 3" [75mm] THE SUPPLY AIR FAN SHALL STOP. HIGH PRESSURE SENSOR SHALL BE HARDWIRED TO THE SUPPLY FAN VFD AND UNIT SHALL BE SHUTDOWN IN HAND,AUTO OR BYPASS MODE. HIGH PRESSURE SENSOR WILL REQUIRE MANUAL RESET AT THE DEVICE.

3.4 RETURN FANS SHALL TRACK THE SUPPLY FANS BASED ON A PERCENTAGE OF THE SUPPLY AIR VOLUME SO THAT THE PERCENTAGE OF RETURN TRACKING WILL BE SET AND DETERMINED BASED ON THE DIFFERENCE BETWEEN THE CURRENT SUPPLY AND EXHAUST AIR VOLUMES. INITIALLY THE RETURN FAN PERCENTAGE SHALL BE 38% LESS THAN THE TOTAL SUPPLY AIR VOLUME.

4. HUMIDITY CONTROL

4.1 WHEN THE DIGITAL CONTROL PANEL IS NOT CALLING FOR HUMIDITY, SENSED BY RETURN AIR HUMIDITY SENSOR, THE STEAM CONTROL VALVE SHALL REMAIN CLOSED. WHEN THE DIGITAL CONTROL PANEL IS CALLING FOR HUMIDITY, THE STEAM CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN A RETURN AIR HUMIDITY SET POINT OF 35% (ADJ).

SAFETY INTERLOCK:

4.2 THE 2-WAY STEAM CONTROL VALVE SHALL BE INTERLOCKED WITH THE SUPPLY AIR FANS AND SHALL OVERRIDE A CALL FOR HUMIDITY UNTIL AIRFLOW HAS BEEN PROVEN VIA AIRFLOW SWITCH. ONCE AIRFLOW IS PROVEN THE HUMIDITY CONTROL VALVE SHALL BE ALLOWED TO OPEN AND CONTROLLED VIA RETURN AIR HUMIDITY SENSOR.

OVER HUMIDIFICATION SAFETY:

4.3 AIR HANDLER SHALL HAVE A HIGH-LIMIT IN-DUCT SENSOR INSTALLED IN THE SUPPLY AIR DISCHARGE WIRED THROUGH THE DDC SYSTEM FOR MONITORING AND CONTROLLING HIGH LEVELS OF HUMIDITY. THE HIGH-LIMIT HUMIDSTAT SHALL PREVENT THE 2-WAY STEAM CONTROL VALVE FROM OPERATING WHEN THE SUPPLY DUCT HUMIDITY LEVEL EXCEEDS 55% (ADJ) RELATIVE HUMIDITY.

5. FREEZE PROTECTION

5.1 THE CONTROL SYSTEM SHALL MONITOR THE STATUS OF THE MANUAL RESET FREEZE PROTECTION THERMOSTAT INSTALLED ACROSS THE UPSTREAM FACE OF THE COOLING COIL. IF THE THERMOSTAT DETECTS AIR TEMPERATURE LESS THAN 40°F ALONG ANY ONE FOOT SECTION OF IT'S ELEMENT, IT SHALL TRIP OPEN AND CAUSE THE SUPPLY AND RETURN FANS TO SHUT DOWN AND CLOSE THE OUTSIDE AIR DAMPERS. THE RETURN AIR DAMPER SHALL BE SET TO THE 100% OPEN POSITION.

6. AUTOMATIC SHUTDOWN/RESTART

6.1 WHEN SMOKE IS DETECTED BY THE DUCT SMOKE DETECTOR, THE SUPPLY AND RETURN FANS SHALL SHUT DOWN. OUTSIDE AIR AND RELIEF AIR DAMPERS CLOSE AND RETURN AIR DAMPER OPENS 100%. THE SUPPLY AND RETURN FANS SHALL RESTART WHEN THE SMOKE DETECTOR IS RESET. EXHAUST FANS SERVING AREA OF THE SUPPLY FANS SHALL CONTINUE TO RUN.

7. FILTER MONITORING

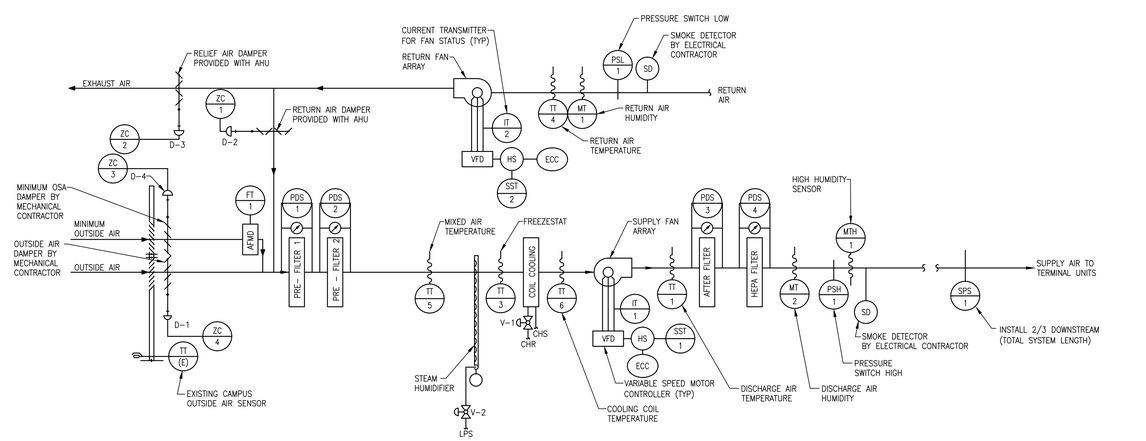
7.1 THE CONTROL SYSTEM SHALL MONITOR AND DISPLAY THE PRESSURE DROP ACROSS THE PRE-FILTERS AND AFTER/FINAL FILTERS, AND ALARM THE HOST COMPUTER IF THE PRESSURE EXCEEDS AS INDICATED BELOW:
PRE-FILTER 1 – 1" W.C.
PRE-FILTER 2 – 1.5" W.C.
AFTER-FILTER – 1.5" W.C.

SYSTEM: AHU-15 | POINT LEGEND | SYSTEM OUTPUTS: BINARY, ANA-LOG | SYSTEM INPUTS: BINARY, ANALOG | SYSTEM SOFTWARE/CONTROL: ALARM PROCESSING, APPLICATION/FUNCTION | PAGE:

SYSTEM COMPONENT:	POINT ID	ABBREVIATION	REMARKS
RETURN AIR TEMPERATURE	AI-1	TT-4	
RETURN AIR HUMIDITY	AI-2	MT-1	
MIXED AIR TEMPERATURE	AI-3	TT-5	
COOILING COIL TEMPERATURE	AI-4	TT-6	
DISCHARGE AIR TEMPERATURE	AI-5	TT-1	
DISCHARGE STATIC PRESSURE	BI-9	SPC-1	
DISCHARGE AIR HUMIDITY	AI-6	MT-2	
OUTSIDE AIR TEMPERATURE	AI-7	TT-(E)	NOTE 1
RETURN LOW PRESSURE	AI-8	PSL	
RETURN FAN STATUS	BI-2	RF-STS	
SUPPLY FAN STATUS	BI-3	SF-STS	
STATIC PRESSURE HIGH LIMIT	BI-4	PSH-1	
HUMIDITY HIGH LIMIT	BI-5	MTH-1	
SUPPLY FAN VFD ALARM	BI-6	SF-ALA	
RETURN FAN VFD ALARM	BI-7	RF-ALA	
RETURN FAN VFD	AO-1	RF-SPD	
SUPPLY FAN VFD	AO-2	SF-SPD	
OUTSIDE AIR DAMPER	AO-3	ZC-4	
RETURN AIR DAMPER	AO-4	ZC-1	
EXHAUST AIR DAMPER	AO-5	ZC-2	
MINIMUM OUTSIDE AIR DAMPER	AO-6	ZC-3	
PRE-HEAT VALVE V-1	AO-7	PHT-V1	
COOLING VALVE V-3	AO-8	CLG-V1	
STEAM HUMIDIFIER VALVE V-2	AO-9	HUM-V4	
RETURN FAN START/STOP	BO-1	RF-SST	
SUPPLY FAN START/STOP	BO-2	SF-SST	
PRE-FILTER PF-1	AI-9	PF-1	
PRE-FILTER PF-2	AI-10	PF-2	
AFTER FILTER AF-1	AI-11	AF-1	
MINIMUM OSA FLOW	AI-10	FT-1	
SMOKE DETECTION	BI-8	SD	

NOTES:
1. ATC CONTRACTOR SHALL PROGRAM EXISTING DDC SYSTEM TO INCORPORATE FOR PROJECT EXPANSION.

1 AIR HANDLING UNIT AHU-15 CONTROL DIAGRAM AND CONTROL POINTS LIST
NTS



SEQUENCE OF OPERATION FOR AHU-16 (SURGERY UNIT)

1. GENERAL

1.1 SUPPLY FANS SHALL BE STARTED AND STOPPED MANUALLY FROM THE DDC GRAPHIC SCREEN AND RUN CONTINUOUSLY WHENEVER THE H-O-A IS IN THE AUTO POSITION AND MANUALLY STARTED OR STOPPED BY THE HAND POSITION. RETURN FANS SHALL START ON PROOF OF OPERATION OF SUPPLY FANS. WHEN THE AIR HANDLER IS "OFF", MINIMUM OSA, RELIEF AIR AND OSA DAMPERS SHALL BE FULLY CLOSED. UPON A SIGNAL TO START MINIMUM OSA DAMPER SHALL FULLY OPEN, OUTSIDE AIR DAMPER, RELIEF AIR DAMPER AND RETURN AIR DAMPER SHALL FULLY OPEN AND THEN MODULATE TO MAINTAIN MIXED AIR TEMPERATURE SETPOINT (ADJ), (3°F BELOW DISCHARGE AIR TEMPERATURE SETPOINT)(ADJ). THE INITIAL DISCHARGE TEMPERATURE SHALL BE SET FOR 50°F. THE DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE ADJUSTED BETWEEN 50°F AND 55°F (ADJ) BASED ON THE AVERAGE COOLING SIGNAL FROM THE VARIABLE AIR AND CONSTANT VOLUME BOXES SERVED BY THE AIR HANDLING UNIT.

2. TEMPERATURE CONTROL

MIXED AIR TEMPERATURE CONTROL:

2.1 THE CONTROL SYSTEM SHALL MODULATE THE OUTSIDE, RETURN AND RELIEF DAMPERS TO MAINTAIN THE MIXED AIR TEMPERATURE AT THE CURRENT SET POINT WHICH SHALL BE THE CURRENT DISCHARGE AIR TEMPERATURE SET POINT MINUS AN ADJUSTABLE OFFSET (INITIALLY 3°F ADJ).

2.2 IF THE SYSTEM CANNOT MAINTAIN THE MIXED AIR SETPOINT USING THE ECONOMIZER DAMPERS, (OUTSIDE AIR DAMPER, RETURN AIR DAMPER AND RELIEF AIR DAMPER) THE DDC SYSTEM SHALL MODULATE THE HOT WATER PREHEAT VALVE OR CHILLED WATER VALVE TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT (ADJ). PRIOR TO MODULATING THE HOT WATER VALVE, THE MODULATING OUTSIDE AIR DAMPER SHALL BE FULLY CLOSED, RELIEF AIR MODULATING DAMPER SHALL BE SET TO THE MINIMUM POSITION AND THE RETURN AIR DAMPER SHALL BE SET OPEN SO THAT THE PERCENTAGE OF RETURN AIR SHALL BE EQUAL TO 100% MINUS THE RELIEF AIR FLOW REQUIREMENT. PRIOR TO MODULATING THE CHILLED WATER VALVE WHILE ECONOMIZING, THE ECONOMIZER DAMPERS SHALL BE FULLY OPEN. IF THE ECONOMIZER DAMPERS ARE LESS THAN FULLY OPEN, THE CHILLED WATER VALVE SHALL NOT BE ALLOWED TO OPEN. THE ECONOMIZER CYCLE SHALL BE LOCKED OUT ANYTIME THAT THE OUTSIDE AIR TEMPERATURE IS GREATER THAN THE AIR HANDLER RETURN AIR TEMPERATURE. ECONOMIZER DAMPERS SHALL BE SET TO MINIMUM SETTINGS AND THE CHILLED WATER VALVE SHALL MODULATE TO MAINTAIN DISCHARGE AIR TEMPERATURE SETPOINT.

ECONOMIZER INTERLOCK:

2.3 THE RETURN AIR DAMPER SHALL BE SET TO 100% RETURN AIR ANYTIME THE FANS ARE NOT IN OPERATION. WHEN THE FANS ARE IN OPERATION, THE MINIMUM OUTSIDE AIR DAMPER SHALL ALWAYS BE OPEN AND THE CONTROL SYSTEM SHALL MONITOR THE FLOW OF OUTDOOR AIR. THE MINIMUM DESIGN AIRFLOW REQUIREMENT SHALL ALWAYS BE MET VIA THE MINIMUM OSA DAMPER.

3. AIR FLOW CONTROL

3.1 THE SUPPLY AIR FLOW SHALL BE CONTROLLED BY DDC SYSTEM AND SUPPLY FAN VARIABLE SPEED MOTOR CONTROLLER TO MAINTAIN 1.5" OF DUCT STATIC PRESSURE (FIELD ADJUSTABLE).

3.2 EACH SET OF FANS (SUPPLY AND RETURN) HAVE A LEAD VFD AND A BACKUP VFD. IF LEAD VFD FAILS, TEMTROL CONTROL CIRCUIT SHALL DE-ENERGIZE LEAD VFD CONTACTOR, ENERGIZE BACKUP VFD CONTACTOR, AND START BACKUP VFD. OPERATOR RESETS FAILED VFD LOCKOUT MANUALLY AT THE TEMTROL CONTROL PANEL. THE DDC SYSTEM SHALL MODULATE THE FAN VFD TO MAINTAIN AIRFLOW. THE CONTROL SYSTEM SHALL AUTOMATICALLY SWITCH THE LEAD VFD BASED ON A 7 DAY INTERVAL SCHEDULE (ADJ).

3.3 USING HIGH PRESSURE SENSOR LOCATED AT THE SUPPLY FAN DISCHARGE, SHALL PREVENT THE SUPPLY FAN FROM DEVELOPING OVER 3" [75mm] OF STATIC PRESSURE (FIELD ADJUSTABLE). IF STATIC PRESSURE DOES EXCEED 3" [75mm] THE SUPPLY AIR FAN SHALL STOP. HIGH PRESSURE SENSOR SHALL BE HARDWIRED TO THE SUPPLY FAN VFD AND UNIT SHALL BE SHUTDOWN IN HAND,AUTO OR BYPASS MODE. HIGH PRESSURE SENSOR WILL REQUIRE MANUAL RESET AT THE DEVICE.

3.4 RETURN FANS SHALL TRACK THE SUPPLY FANS BASED ON A PERCENTAGE OF THE SUPPLY AIR VOLUME SO THAT THE PERCENTAGE OF RETURN TRACKING WILL BE SET AND DETERMINED BASED ON THE DIFFERENCE BETWEEN THE CURRENT SUPPLY AND EXHAUST AIR VOLUMES. INITIALLY THE RETURN FAN PERCENTAGE SHALL BE 18% LESS THAN THE TOTAL SUPPLY AIR VOLUME.

4. HUMIDITY CONTROL

4.1 WHEN THE DIGITAL CONTROL PANEL IS NOT CALLING FOR HUMIDITY, SENSED BY RETURN AIR HUMIDITY SENSOR, THE STEAM CONTROL VALVE SHALL REMAIN CLOSED. WHEN THE DIGITAL CONTROL PANEL IS CALLING FOR HUMIDITY, THE STEAM CONTROL VALVE SHALL MODULATE OPEN TO MAINTAIN A RETURN AIR HUMIDITY SET POINT OF 35% (ADJ).

SAFETY INTERLOCK:

4.2 THE 2-WAY STEAM CONTROL VALVE SHALL BE INTERLOCKED WITH THE SUPPLY AIR FANS AND SHALL OVERRIDE A CALL FOR HUMIDITY UNTIL AIRFLOW HAS BEEN PROVEN VIA AIRFLOW SWITCH. ONCE AIRFLOW IS PROVEN THE HUMIDITY CONTROL VALVE SHALL BE ALLOWED TO OPEN AND CONTROLLED VIA RETURN AIR HUMIDITY SENSOR.

OVER HUMIDIFICATION SAFETY:

4.3 AIR HANDLER SHALL HAVE A HIGH-LIMIT IN-DUCT SENSOR INSTALLED IN THE SUPPLY AIR DISCHARGE WIRED THROUGH THE DDC SYSTEM FOR MONITORING AND CONTROLLING HIGH LEVELS OF HUMIDITY. THE HIGH-LIMIT HUMIDSTAT SHALL PREVENT THE 2-WAY STEAM CONTROL VALVE FROM OPERATING WHEN THE SUPPLY DUCT HUMIDITY LEVEL EXCEEDS 55% (ADJ) RELATIVE HUMIDITY.

5. FREEZE PROTECTION

5.1 THE CONTROL SYSTEM SHALL MONITOR THE STATUS OF THE MANUAL RESET FREEZE PROTECTION THERMOSTAT INSTALLED ACROSS THE UPSTREAM FACE OF THE COOLING COIL. IF THE THERMOSTAT DETECTS AIR TEMPERATURE LESS THAN 40°F ALONG ANY ONE FOOT SECTION OF IT'S ELEMENT, IT SHALL TRIP OPEN AND CAUSE THE SUPPLY AND RETURN FANS TO SHUT DOWN AND CLOSE THE OUTSIDE AIR DAMPERS. THE RETURN AIR DAMPER SHALL BE SET TO THE 100% OPEN POSITION.

6. AUTOMATIC SHUTDOWN/RESTART

6.1 WHEN SMOKE IS DETECTED BY THE DUCT SMOKE DETECTOR, THE SUPPLY AND RETURN FANS SHALL SHUT DOWN. OUTSIDE AIR AND RELIEF AIR DAMPERS CLOSE AND RETURN AIR DAMPER OPENS 100%. THE SUPPLY AND RETURN FANS SHALL RESTART WHEN THE SMOKE DETECTOR IS RESET. EXHAUST FANS SERVING AREA OF THE SUPPLY FANS SHALL CONTINUE TO RUN.

7. FILTER MONITORING

7.1 THE CONTROL SYSTEM SHALL MONITOR AND DISPLAY THE PRESSURE DROP ACROSS THE PRE-FILTERS AND AFTER/FINAL FILTERS, AND ALARM THE HOST COMPUTER IF THE PRESSURE EXCEEDS AS INDICATED BELOW:
PRE-FILTER 1 – 1" W.C.
PRE-FILTER 2 – 1.5" W.C.
AFTER-FILTER – 1.5" W.C.
FINAL-FILTER – 2.7" W.C.

SYSTEM: AHU-16 | POINT LEGEND | SYSTEM OUTPUTS: BINARY, ANA-LOG | SYSTEM INPUTS: BINARY, ANALOG | SYSTEM SOFTWARE/CONTROL: ALARM PROCESSING, APPLICATION/FUNCTION | PAGE:

SYSTEM COMPONENT:	POINT ID	ABBREVIATION	REMARKS
RETURN AIR TEMPERATURE	AI-1	TT-4	
RETURN AIR HUMIDITY	AI-2	MT-1	
MIXED AIR TEMPERATURE	AI-3	TT-5	
COOILING COIL TEMPERATURE	AI-4	TT-6	
DISCHARGE AIR TEMPERATURE	AI-5	TT-1	
DISCHARGE STATIC PRESSURE	AI-6	SPS-1	
DISCHARGE AIR HUMIDITY	AI-7	MT-2	
OUTSIDE AIR TEMPERATURE	AI-8	TT-(E)	NOTE 1
RETURN LOW PRESSURE	BI-1	PSL-1	
RETURN FAN STATUS	BI-2	RF-STS	
SUPPLY FAN STATUS	BI-3	SF-STS	
STATIC PRESSURE HIGH LIMIT	BI-4	PSH-1	
HUMIDITY HIGH LIMIT	BI-5	MTH-1	
SUPPLY FAN VFD ALARM	BI-6	SF-ALA	
RETURN FAN VFD ALARM	BI-7	RF-ALA	
RETURN FAN VFD	AO-1	RF-SPD	
SUPPLY FAN VFD	AO-2	SF-SPD	
OUTSIDE AIR DAMPER	AO-3	ZC-4	
RETURN AIR DAMPER	AO-4	ZC-1	
EXHAUST AIR DAMPER	AO-5	ZC-2	
MINIMUM OUTSIDE AIR DAMPER	AO-6	ZC-3	
COOLING VALVE V-1	AO-7	CLG-V1	
STEAM HUMIDIFIER VALVE V-2	AO-8	HUM-V4	
MINIMUM OSA FLOW	AO-10	FT-1	
RETURN FAN START/STOP	BO-1	RF-SST	
SUPPLY FAN START/STOP	BO-2	SF-SST	
PRE-FILTER PF-1	AI-9	PF-1	
PRE-FILTER PF-2	AI-10	PF-2	
AFTER FILTER AF-1	AI-11	AF-1	
FINAL FILTER FF-1	AI-12	FF-1	
SMOKE DETECTION	BI-8	SD	

NOTES:
1. ATC CONTRACTOR SHALL PROGRAM EXISTING DDC SYSTEM TO INCORPORATE FOR PROJECT EXPANSION.

2 AIR HANDLING UNIT AHU-16 CONTROL DIAGRAM AND CONTROL POINTS LIST
NTS

GENERAL SHEET NOTES

A. THE CONTROLS CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CONTROL COMMUNICATION CONDUIT REQUIREMENTS AND 120 VOLT POWER REQUIREMENTS FOR ALL CONTROLS WITH THE ELECTRICAL CONTRACTOR WHO WILL INSTALL THE CONDUITS AND PROVIDE 120 VOLT POWER FOR THE MECHANICAL CONTROLS.

B. THE CONTROLS CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT POINT OF CONNECTION OF ALL CONTROL WIRING INTO THE EXISTING ENERGY MANAGEMENT SYSTEM AND WHETHER OR NOT AN UPGRADE TO THE GLOBAL CONTROLLER IS REQUIRED. IF AN UPGRADE IS REQUIRED, THE CONTROLS CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING.

C. IF THE PROJECT WORK RESULTS IN CHANGES TO THE CURRENT DDC FLOORPLANS, EITHER BECAUSE OF ARCHITECTURAL CHANGES OR CHANGES TO THE HVAC SYSTEM, THE DDC CONTRACTOR IS RESPONSIBLE FOR UPDATING THE DDC FLOORPLAN IN THE DDC SYSTEM TO MAKE IT CURRENT AND ACCURATE.

D. THE DDC CONTRACTOR IS RESPONSIBLE FOR CREATING ACCURATE GRAPHICAL FLOORPLANS SHOWING THE HVAC SYSTEM FOR EACH FLOOR CREATED AS A RESULT OF THE PROJECT AND ADDING THEM TO THE DDC SYSTEM. THE VA RESERVES THE RIGHT TO APPROVE ANY FLOORPLANS BEFORE THEY ARE UPLOADED.

E. IF THE PROJECT HAS ALTERED THE LOOK OF A BUILDING COMPARED TO THE BUILDING PHOTO IN THE DDC SYSTEM, THE DDC CONTRACTOR IS RESPONSIBLE FOR UPDATING THE PHOTO IN THE DDC SYSTEM TO MAKE IT CURRENT. THE VA RESERVES THE RIGHT TO APPROVE ANY PHOTO BEFORE IT IS UPLOADED.

F. THE DDC CONTRACTOR IS RESPONSIBLE FOR ADDING A NEW PHOTO TO THE DDC SYSTEM FOR EACH NEW BUILDING ADDED TO THE CAMPUS AS A RESULT OF THE PROJECT. THE VA RESERVES THE RIGHT TO APPROVE ANY PHOTO BEFORE IT IS UPLOADED.

FOR CONSTRUCTION

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

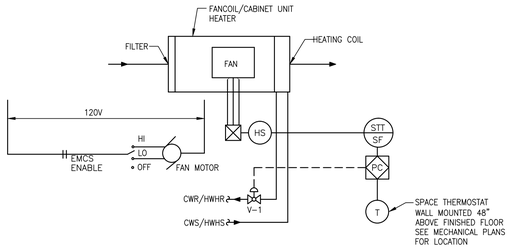
PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317-M50
XREF FILE NAME: 531-317_xVAbord

DRAWING TITLE: MECHANICAL CONTROLS
PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT
DATE: 11/01/2011
PROJECT NO.: 531-317
APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE
APPROVED: MEDICAL CENTER DIRECTOR
BUILDING NUMBER: 85
CHECKED: JB
DRAWN: JA
LOCATION: VAMC BOISE, IDAHO
DRAWING NO.: M5.0
DWG 111 OF 188

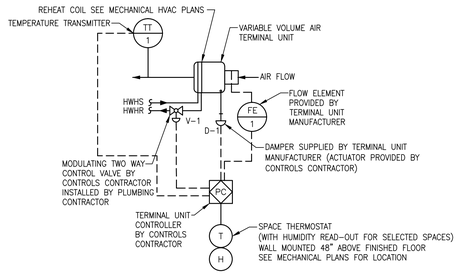
DEPARTMENT OF VETERANS AFFAIRS



FAN COIL UNIT/CABINET UNIT HEATER CONTROL SEQUENCE

A. REFERENCE HVAC DESIGN DATA SCHEDULE ON SHEET M0.2 FOR SET POINT CONDITIONS.

B. DURING NORMAL OPERATION, THE DDC CONTROLLER WILL MONITOR THE SPACE TEMPERATURE AND MODULATE THE CHILLED WATER (FCU-47) OR HEATING WATER VALVE (FCU-48) TO MAINTAIN THE SPACE TEMPERATURE SET POINT (ADJ).



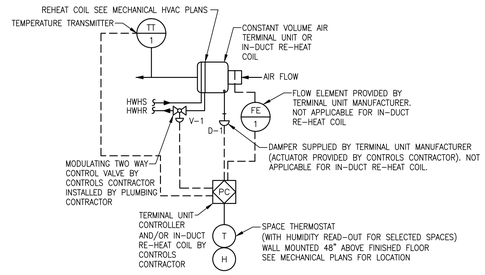
VAV BOX CONTROL SEQUENCE WITH DEADBAND

A. REFERENCE HVAC DESIGN DATA SCHEDULE ON SHEET M0.2 SET POINT CONDITIONS.

B. UPON FALL IN SPACE TEMPERATURE THE VAV DAMPER D-1 WILL MODULATE TO MINIMUM POSITION.

C. UPON FURTHER DROP IN SPACE TEMPERATURE VALVE V-1 WILL MODULATE TO MAINTAIN SET POINT.

D. UPON RISE IN SPACE TEMPERATURE VALVE V-1 SHALL MODULATE CLOSED AND VAV DAMPER D-1 WILL MODULATE POSITION TO MAINTAIN SET POINT.



CAV BOX AND/OR IN-DUCT RE-HEAT COIL CONTROL SEQUENCE WITH DEADBAND

A. REFERENCE HVAC DESIGN DATA SCHEDULE ON SHEET M0.2 FOR SET POINT CONDITIONS.

B. UPON FALL IN SPACE TEMPERATURE BELOW SET POINT VALVE V-1 WILL MODULATE TO MAINTAIN SET POINT.

C. UPON RISE IN SPACE TEMPERATURE VALVE V-1 SHALL MODULATE CLOSED TO MAINTAIN SET POINT.

SYSTEM: FCU-47/FCU-48 — POINT LEGEND — SYSTEM OUTPUTS: BINARY, ANALOG — SYSTEM INPUTS: BINARY, ANALOG — SYSTEM SOFTWARE/CONTROL: ALARM PROCESSING, APPLICATION/FUNCTION — PAGE:

SYSTEM COMPONENT:	POINT ID	ABBREVIATION	REMARKS
SUPPLY FAN START/STOP	BO-1	SF-SST	NOTE 1
CHILLED WATER VALVE	BO-2	CLG-V1	NOTE 2
HOT WATER VALVE	BO-3	RH-V1	NOTE 3
SUPPLY AIR TEMPERATURE	AI-1	SAT	NOTE 2
SPACE TEMPERATURE	AI-2	ST	NOTE 1

NOTES:
1. FAN COIL AND CABINET UNIT HEATER.
2. FAN COIL ONLY.
3. CABINET UNIT HEATER ONLY.

1 FAN COIL/CABINET UNIT HEATER CONTROL DIAGRAM AND POINT LIST
NTS

SYSTEM: TERMINAL UNIT — POINT LEGEND — SYSTEM OUTPUTS: BINARY, ANALOG — SYSTEM INPUTS: BINARY, ANALOG — SYSTEM SOFTWARE/CONTROL: ALARM PROCESSING, APPLICATION/FUNCTION — PAGE:

SYSTEM COMPONENT:	POINT ID	ABBREVIATION	REMARKS
SPACE TEMPERATURE	AI-1	ST	NOTE 1
ROOM HUMIDITY	AI-2	RAH	NOTE 1
SPACE SET POINT	AI-3	SSP	
RE-HEAT VALVE V-1	BO-1	RH-V1	
DISCHARGE AIR TEMPERATURE	AI-4	DAT	NOTE 2
SUPPLY AIR FLOW (CFM)	AI-5	SAF	
DAMPER POSITION	BO-2	DMPR-POS	

NOTES:
1. PROVIDE HUMIDITY MONITORING FOR OR-3, OR-4, CLEAN SUPPLY, CLEAN UTILITY, CLEAN LINEN AND SUTURE STORAGE ROOMS. SEE MECHANICAL SHEETS M2.2A AND M2.2B.
2. DO NOT PROVIDE FOR VAV BOXES SERVING SHELL SPACES.

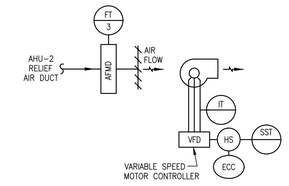
2 VARIABLE AIR VOLUME CONTROL DIAGRAM AND POINT LIST
NTS

SYSTEM: TERMINAL UNIT — POINT LEGEND — SYSTEM OUTPUTS: BINARY, ANALOG — SYSTEM INPUTS: BINARY, ANALOG — SYSTEM SOFTWARE/CONTROL: ALARM PROCESSING, APPLICATION/FUNCTION — PAGE:

SYSTEM COMPONENT:	POINT ID	ABBREVIATION	REMARKS
SPACE TEMPERATURE	AI-1	ST	
ROOM HUMIDITY	AI-2	RAH	NOTE 1
SPACE SET POINT	AI-3	SSP	
RE-HEAT VALVE V-1	BO-1	RH-V1	
DISCHARGE AIR TEMPERATURE	AI-4	DAT	NOTE 2
SUPPLY AIR FLOW (CFM)	AI-5	SAF	
DAMPER POSITION	BO-2	DMPR-POS	

NOTES:
1. PROVIDE HUMIDITY MONITORING FOR OR-3, OR-4, CLEAN SUPPLY, CLEAN UTILITY, CLEAN LINEN AND SUTURE STORAGE ROOMS. SEE MECHANICAL SHEETS M2.2A AND M2.2B.
2. DO NOT PROVIDE FOR VAV BOXES SERVING SHELL SPACES.

3 CONSTANT VOLUME CONTROL DIAGRAM AND POINT LIST
NTS



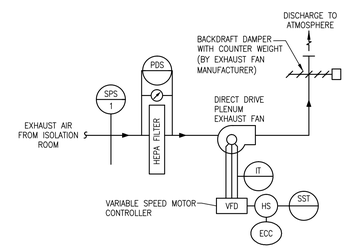
RELIEF AIR FANS (RF-3A-RF-3H) CONTROL SEQUENCE

A. RELIEF AIR FANS SHALL BE INTERLOCKED WITH EXISTING RETURN FAN RF-1 (AHU-2 RETURN FAN) AND SHALL RUN CONTINUOUSLY ONCE STARTED. IF A SINGLE FAN FAILS TO START, OR IF THERE IS A LOSS OF POWER, THE DDC SYSTEM SHALL ISSUE AN ALARM AT THE FRONT END. THE REMAINING FANS IN OPERATION SHALL ADJUST FAN SPEED IN UNISON TO COMPENSATE FOR THE INDIVIDUAL FAN FAILURE. ONCE STARTED THE RELIEF AIR FANS SHALL BE CONTROLLED BY THE DDC SYSTEM AND RELIEF AIR FAN VARIABLE SPEED MOTOR CONTROLLER. THE VARIABLE SPEED MOTOR CONTROLLER SHALL VARY THE SPEED OF THE RELIEF FANS IN UNISON BY TRACKING THE AIRFLOW MEASURED BY AIR FLOW DEVICE AFMD-3. AT MINIMUM, THE INITIAL AIRFLOW VOLUME SHALL ALWAYS PROVIDE 21,820 CFM. FLOW WILL ADJUST TO A MAXIMUM OF 40,000 CFM BASED ON AIR VOLUME MEASUREMENT BY AFMD-3. UPON FAILURE OF EXISTING EXHAUST FAN EF-3 THE MINIMUM AIRFLOW SHALL RE-SET TO 12,000 CFM UNTIL OPERATION OF EF-3 RESUMES. UPON FAILURE OF EXISTING RETURN FAN RF-1 THE RELIEF FAN VARIABLE SPEED MOTOR CONTROLLER SHALL ADJUST FAN SPEED AND SET AT ORIGINAL MINIMAL AIR VOLUME SET POINT (21,820 CFM).

SYSTEM: RF-3A THROUGH RF-3H — POINT LEGEND — SYSTEM OUTPUTS: BINARY, ANALOG — SYSTEM INPUTS: BINARY, ANALOG — SYSTEM SOFTWARE/CONTROL: ALARM PROCESSING, APPLICATION/FUNCTION — PAGE:

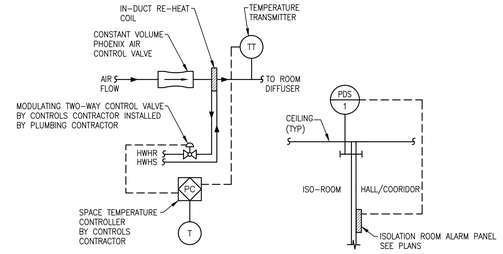
SYSTEM COMPONENT:	POINT ID	ABBREVIATION	REMARKS
RELIEF AIR FLOW (CFM)	AI-1	RAT	
RELIEF FAN START/STOP	BO-1	RF-SST	
VFD CONTROL	AI-2	SPD-CTL	
RELIEF FAN STATUS	BI-1	RF-STS	

4 RELIEF AIR FANS (RF-3A-RF-3H) CONTROL DIAGRAM POINT LIST
NTS



ISOLATION EXHAUST FAN CONTROL SEQUENCE

A. EXHAUST FAN SHALL RUN CONTINUOUSLY ONCE STARTED BY THE DDC SYSTEM AND SHALL ISSUE AN ALARM AT THE FRONT END UPON FAILURE TO START OR LOSS OF POWER. ONCE STARTED, THE EXHAUST AIR FLOW SHALL BE CONTROLLED BY THE DDC SYSTEM AND EXHAUST FAN VARIABLE SPEED MOTOR CONTROLLER TO MAINTAIN 1.5" OF DUCT STATIC PRESSURE (FIELD ADJUSTABLE). SENSED BY DUCT STATIC PRESSURE SENSOR SPS-1. THE DDC SYSTEM SHALL MONITOR DIFFERENTIAL PRESSURE ACROSS THE HEPA FILTER AND ISSUE AN ALARM IF PDS-1 EXCEEDS 2" WC.



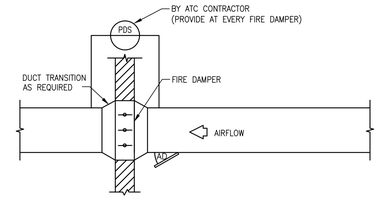
ISOLATION ROOM CONTROL SEQUENCE

A. AN INDIVIDUAL CONSTANT VOLUME PHOENIX CONTROL VALVE SHALL MAINTAIN THE SUPPLY AIRFLOW INTO THE ISOLATION ROOM BASED ON A FIXED CONSTANT VOLUME OFFSET BETWEEN THE SUPPLY AND EXHAUST ROOM VALUES. THE OFFSET SHALL PROVIDE A NEGATIVE PRESSURE IN THE ISOLATION ROOM RELATIVE TO THE ADJOINING SURROUNDING SPACES.
THE ROOM THERMOSTAT ON A CALL FOR HEATING SHALL SIGNAL THE RE-HEAT COIL CONTROL VALVE TO MODULATE TO MAINTAIN THE SPACE SETPOINT (ADJ). AN ISOLATION ROOM MONITOR SHALL BE INSTALLED OUTSIDE THE DOOR OF THE ISOLATION ROOM. A VISUAL ICON WITH GREEN STATUS LIGHT SHALL INDICATE THE ISOLATION MODE (ISOLATION). A RED ISOLATION ALARM LIGHT SHALL FLASH AND AUDIBLE ALARM SHALL SOUND UPON LOSS OF ROOM AIRFLOW DIFFERENTIAL. DIFFERENTIAL SHALL BE SET TO -0.05" W.C. RELATIVE TO THE ADJOINING SURROUNDING SPACES AND SHALL ALARM IF THE DIFFERENTIAL FALLS BELOW THE DIFFERENTIAL SETPOINT. THE ALARM PANAL SHALL BE EQUIPPED WITH A LOCAL SILENT MODE FUNCTION. THE ALARM PANEL SHALL BE ABLE TO BE TURNED TO THE "OFF" POSITION WHEN ISOLATION MODE IS NOT REQUIRED.

SYSTEM: EF-26,27,28 — POINT LEGEND — SYSTEM OUTPUTS: BINARY, ANALOG — SYSTEM INPUTS: BINARY, ANALOG — SYSTEM SOFTWARE/CONTROL: ALARM PROCESSING, APPLICATION/FUNCTION — PAGE:

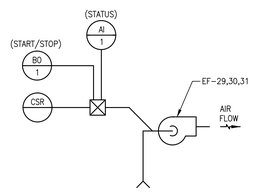
SYSTEM COMPONENT:	POINT ID	ABBREVIATION	REMARKS
EXHAUST FAN START/STOP	BO-1	EF-SST	
STATIC PRESSURE	AI-1	SP	
HEPA FILTER	AI-2	HF	
VFD CONTROL	AI-3	SPD-CTL	
EXHAUST FAN STATUS	BI-1	EF-STS	

5 ISOLATION ROOM CONTROL DIAGRAM AND CONTROL POINT LIST
NTS



NOTE:
1. CLOSURE OF FIRE DAMPER OR INCREASE IN PRESSURE, AN ALARM SHALL BE SENT TO THE DDC SYSTEM.

6 FIRE DAMPER CONTROL DIAGRAM
NTS



EXHAUST FAN CONTROL SEQUENCE

A. EXHAUST FAN SHALL RUN CONTINUOUSLY ONCE STARTED BY THE DDC SYSTEM AND SHALL ISSUE AN ALARM AT THE FRONT END UPON FAILURE TO START OR LOSS OF POWER.

7 CONSTANT VOLUME EXHAUST FAN CONTROL DIAGRAM
NTS

FOR CONSTRUCTION

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

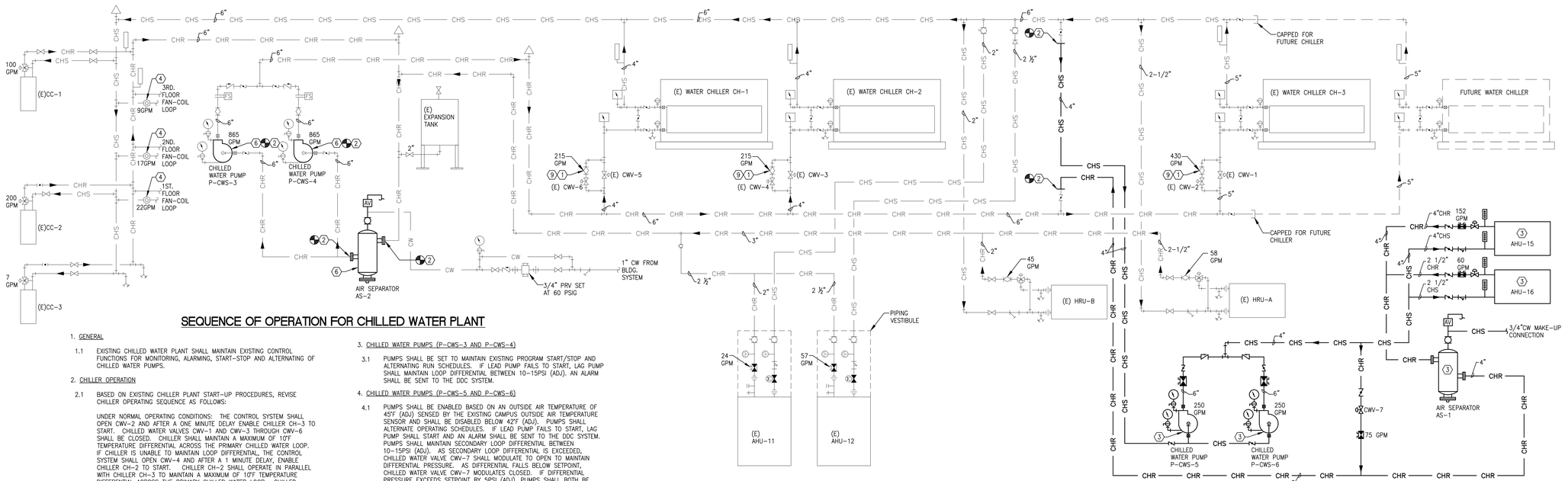
PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317-M51
XREF FILE NAME: 531-317_xVAbord

DRAWING TITLE: MECHANICAL CONTROLS
PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT
APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE
APPROVED: MEDICAL CENTER DIRECTOR
BUILDING NUMBER: 85
CHECKED: JB
DRAWN: JA
LOCATION: VAMC BOISE, IDAHO
DATE: 11/01/2011
PROJECT NO.: 531-317
DRAWING NO.: M5.1
DWG 112 OF 188

DEPARTMENT OF VETERANS AFFAIRS



SEQUENCE OF OPERATION FOR CHILLED WATER PLANT

1. GENERAL

1.1 EXISTING CHILLED WATER PLANT SHALL MAINTAIN EXISTING CONTROL FUNCTIONS FOR MONITORING, ALARMING, START-STOP AND ALTERNATING OF CHILLED WATER PUMPS.

2. CHILLER OPERATION

2.1 BASED ON EXISTING CHILLER PLANT START-UP PROCEDURES, REVISE CHILLER OPERATING SEQUENCE AS FOLLOWS:

UNDER NORMAL OPERATING CONDITIONS: THE CONTROL SYSTEM SHALL OPEN CWV-2 AND AFTER A ONE MINUTE DELAY ENABLE CHILLER CH-3 TO START. CHILLED WATER VALVES CWV-1 AND CWV-3 THROUGH CWV-6 SHALL BE CLOSED. CHILLER SHALL MAINTAIN A MAXIMUM OF 10°F TEMPERATURE DIFFERENTIAL ACROSS THE PRIMARY CHILLED WATER LOOP. IF CHILLER IS UNABLE TO MAINTAIN LOOP DIFFERENTIAL, THE CONTROL SYSTEM SHALL OPEN CWV-4 AND AFTER A 1 MINUTE DELAY, ENABLE CHILLER CH-2 TO START. CHILLER CH-2 SHALL OPERATE IN PARALLEL WITH CHILLER CH-3 TO MAINTAIN A MAXIMUM OF 10°F TEMPERATURE DIFFERENTIAL ACROSS THE PRIMARY CHILLED WATER LOOP. CHILLED WATER VALVES CWV-1, CWV-3, CWV-5 AND CWV-6 REMAIN CLOSED. IF BOTH CHILLER CH-3 AND CH-2 ARE STILL UNABLE TO MAINTAIN MAXIMUM LOOP DIFFERENTIAL SETPOINT OF 10°F, THE CONTROL SYSTEM SHALL OPEN CWV-6 AND AFTER A 1 MINUTE DELAY, ENABLE CHILLER CH-1 TO START. ALL THREE CHILLERS SHALL OPERATE IN PARALLEL TO MAINTAIN A MAXIMUM OF 10°F TEMPERATURE DIFFERENTIAL ACROSS THE PRIMARY CHILLED WATER LOOP. CHILLED WATER VALVES CWV-1, CWV-3, AND CWV-5 REMAIN CLOSED.

AS THE TEMPERATURE DIFFERENTIAL ACROSS THE PRIMARY CHILLED WATER LOOP DROPS BELOW 8°F AND / OR CHILLER CH-1 IS 50% OR LESS LOADED THE CONTROL SYSTEM SHALL TURN CH-1 OFF AND AFTER A FIVE MINUTE DELAY CLOSE CHILLED WATER VALVE CVW-6. WITH CH-2 AND CH-3 IN OPERATION, IF THE TEMPERATURE DIFFERENTIAL ACROSS THE PRIMARY CHILLED WATER LOOP DROPS AGAIN BELOW 8°F AND / OR CHILLER CH-2 IS 50% OR LESS LOADED, THE CONTROL SYSTEM SHALL TURN CH-2 OFF AND CLOSE CHILLED WATER VALVE CWV-4 AFTER A FIVE MINUTE DELAY. CHILLER CH-3 THEN STAGES AND UNLOADS AS NECESSARY TO MAINTAIN A 10°F TEMPERATURE DIFFERENTIAL ACROSS THE PRIMARY CHILLED WATER LOOP.

2.2 CHILLED WATER VALVES CWV-1,3 AND 5 SHALL BE REMOVED FROM CURRENT CHILLER OPERATING SEQUENCE.

2.3 IN ORDER FOR THE CHILLERS TO WORK PROPERLY TOGETHER, THE DISCHARGE TEMPERATURE FOR CH-3 MUST BE SET 2°F COLDER THAN THE DISCHARGE TEMPERATURE FOR CH-2. CH-2 SHALL BE SET FOR 2°F COLDER THAN CH-1. VERIFY PRIMARY CHILLED WATER TEMPERATURE SETPOINT WITH VA.

3. CHILLED WATER PUMPS (P-CWS-3 AND P-CWS-4)

3.1 PUMPS SHALL BE SET TO MAINTAIN EXISTING PROGRAM START/STOP AND ALTERNATING RUN SCHEDULES. IF LEAD PUMP FAILS TO START, LAG PUMP SHALL MAINTAIN LOOP DIFFERENTIAL BETWEEN 10-15PSI (ADJ). AN ALARM SHALL BE SENT TO THE DDC SYSTEM.

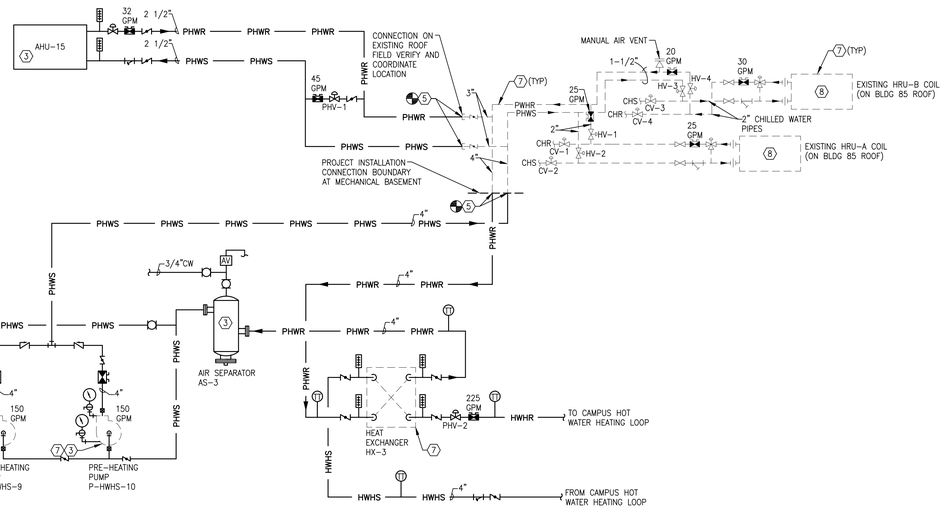
4. CHILLED WATER PUMPS (P-CWS-5 AND P-CWS-6)

4.1 PUMPS SHALL BE ENABLED BASED ON AN OUTSIDE AIR TEMPERATURE OF 45°F (ADJ) SENSED BY THE EXISTING CAMPUS OUTSIDE AIR TEMPERATURE SENSOR AND SHALL BE DISABLED BELOW 42°F (ADJ). PUMPS SHALL ALTERNATE OPERATING SCHEDULES. IF LEAD PUMP FAILS TO START, LAG PUMP SHALL START AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM. PUMPS SHALL MAINTAIN SECONDARY LOOP DIFFERENTIAL BETWEEN 10-15PSI (ADJ). AS SECONDARY LOOP DIFFERENTIAL IS EXCEEDED, CHILLED WATER VALVE CWV-7 SHALL MODULATE TO OPEN TO MAINTAIN DIFFERENTIAL PRESSURE. AS DIFFERENTIAL FALLS BELOW SETPOINT, CHILLED WATER VALVE CWV-7 MODULATES CLOSED. IF DIFFERENTIAL PRESSURE EXCEEDS SETPOINT BY 5PSI (ADJ), PUMPS SHALL BOTH BE DISABLED AND AN ALARM SENT TO THE DDC SYSTEM.

4.2 PROVIDE PUMP CONTROL AND STATUS VIA CSR, PUMP LEAD/LAG SELECTION, AND DISCHARGE WATER TEMPERATURE STATUS FOR DDC MONITORING AND CONTROL.

M5 BUILDING 85 - CHILLED WATER PLANT PIPING SCHEMATIC

SCALE: NTS



SEQUENCE OF OPERATION FOR PRE-HEATING SYSTEM

1. GENERAL

1.1 THE PRE-HEATING SYSTEM SHALL ENABLE BASED ON AN OUTSIDE AIR TEMPERATURE OF 38°F (ADJ) SENSED BY THE EXISTING CAMPUS OUTSIDE AIR TEMPERATURE SENSOR AND SHALL BE DISABLED ABOVE 38°F (ADJ).

1.2 CHILLED WATER VALVES CV-1 THROUGH CV-4 SHALL BE LOCKED OUT WHEN OUTSIDE AIR TEMPERATURE FALLS BELOW 25°F(ADJ) AND PRE-HEATING VALVES HV-1 THROUGH HV-4 SHALL BE ENABLED. PRE-HEATING VALVES SHALL BE LOCKED OUT ABOVE 38°F(ADJ). CHILLED WATER VALVES SHALL BE ENABLED WHEN OUTSIDE AIR TEMPERATURE IS ABOVE 40°F(ADJ).

2. PRE-HEAT WATER OPERATIONS

2.1 UNDER NORMAL OPERATING CONDITIONS: BASED ON A COMMAND FROM DDC SYSTEM TO START, THE LEAD PUMP SHALL START. IF LEAD PUMP FAILS TO START, THE LAG PUMP SHALL START AND AN ALARM SHALL BE SENT TO THE DDC SYSTEM. PUMPS SHALL MAINTAIN LOOP DIFFERENTIAL BETWEEN 10-15 PSI (ADJ). IF LOOP DIFFERENTIAL SET-POINT IS EXCEEDED, PRE-HEAT VALVE PHV-1 SHALL MODULATE OPEN TO MAINTAIN LOOP DIFFERENTIAL. AS LOOP DIFFERENTIAL DROPS BELOW SETPOINT PHV-1 SHALL MODULATE CLOSED. IF DIFFERENTIAL LOOP SETPOINT IS EXCEEDED BY 5 PSI (ADJ) PUMPS SHALL BE DISABLED AND AN ALARM SENT TO THE DDC SYSTEM.

2.2 PROVIDE PUMP CONTROL AND STATUS VIA CSR, PUMP LEAD/LAG SELECTION, AND DISCHARGE WATER TEMPERATURE STATUS FOR DDC MONITORING AND CONTROL.

3. GEOTHERMAL HEAT EXCHANGER

3.1 THE HEAT EXCHANGER SHALL MAINTAIN PRE-HEATING SUPPLY TEMPERATURE AT 135°F BY MODULATING PHV-2.

3.2 PROVIDE HEAT EXCHANGER MONITORING AND CONTROLS FOR PRE-HEATING SUPPLY AND RETURN LOOP TEMPERATURE HOT WATER HEATING SUPPLY AND RETURN TEMPERATURE, AND CONTROL STATUS FOR HEATING VALVES PHV-1 AND PHV-2.

4. PRE-HEATING SYSTEM HVAC CONTROLS COORDINATION

4.1 AS PART OF THE VA MODIFICATIONS TO SPECIALTY CARE TOWER HVAC PROJECT 531-308, OPERATING SEQUENCES AND CONTROL POINTS ESTABLISHED TO CREATE SUCH AS OUTLINED UNDER ITEM 1 THROUGH 2.1 SHALL NOT BE PROVIDED UNDER THIS CONTRACT. THIS CONTRACT SHALL PROVIDE CONTROLS AND OPERATING SEQUENCES FOR ITEMS 2.2 THROUGH 3.2 AND SHALL COORDINATE THE INTERCONNECTION AND INTERFACE WITH ITEMS 1 THROUGH 2.1.

M5 BUILDING 85 - PRE-HEATING WATER PIPING SCHEMATIC

SCALE: NTS

GENERAL SHEET NOTES

A. THE CONTROLS CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL CONTROL COMMUNICATION CONDUIT REQUIREMENTS AND 120 VOLT POWER REQUIREMENTS FOR ALL CONTROLS WITH THE ELECTRICAL CONTRACTOR WHO WILL INSTALL THE CONDUITS AND PROVIDE 120 VOLT POWER FOR THE MECHANICAL CONTROLS.

B. THE CONTROLS CONTRACTOR IS RESPONSIBLE FOR DETERMINING THE EXACT POINT OF CONNECTION OF ALL CONTROL WIRING INTO THE EXISTING ENERGY MANAGEMENT SYSTEM AND WHETHER OR NOT ANY ADDITIONAL BCM/MSTP IS REQUIRED IN THE GLOBAL CONTROLLER. IF AN ADDITIONAL BCM/MSTP IS REQUIRED, THE CONTROLS CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING.

C. MECHANICAL CONTRACTOR SHALL RE-BALANCE EXISTING CHILLED WATER PLANT TO NEW GPM REQUIREMENTS LISTED ON CHILLED WATER PIPING SCHEMATIC. COORDINATE ALL BALANCING REQUIREMENTS WITH VA COTR.

D. CONTROL CONTRACTOR SHALL RE-PROGRAM EXISTING CHILLED WATER PLANT OPERATING SEQUENCE TO NEW SEQUENCE SHOWN.

SHEET KEYED NOTES

1. RE-BALANCE EXISTING CIRCUIT SETTER TO GPM SHOWN.
2. CONNECT TO EXISTING CHILLED WATER SYSTEM.
3. SEE PIPING DETAILS 6/M6.0, 8/M6.1, AND 7/M6.2 FOR PIPING CONNECTIONS AND ADDITIONAL VALVING COMPONENTS.
4. BALANCE EXISTING FLOOR CHILLED WATER TO NEW GPM SHOWN.
5. CONNECT TO EXISTING PREHEATING WATER PIPING WITH NEW.
6. NEW EQUIPMENT PROVIDED AS PART OF THIS CONTRACT.
7. EQUIPMENT AND PIPING SHOWN DASHED ARE BEING PROVIDED BY OTHERS AS PART OF THE VA MODIFICATIONS TO SPECIALITY CARE TOWER HVAC SYSTEM PROJECT 531-308. THIS CONTRACTOR SHALL COORDINATE WITH PROJECT NOTED ABOVE.
8. CONTRACTOR SHALL CONFIRM RE-BALANCE OF CHILLED WATER SYSTEM BEFORE BALANCING HEATING WATER SYSTEM FOR HRU-A AND HRU-B COILS.
9. MECHANICAL CONTRACTOR SHALL VERIFY EXISTING CIRCUIT SETTER CAPACITY WITH NEW FLOW CONDITIONS AND REPLACE IF NEW PRESSURE DIFFERENTIAL EXCEEDS 15 PSI.

FOR CONSTRUCTION

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

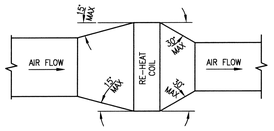
PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

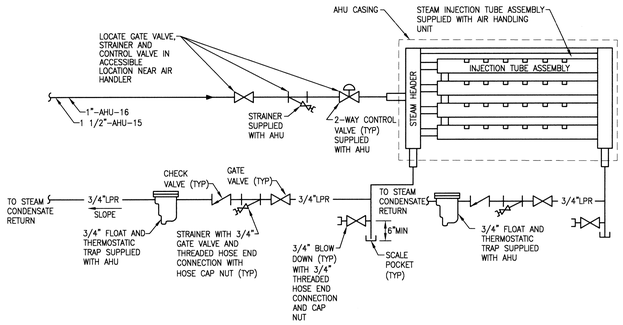
CAD FILE NAME: 531-317-M52
XREF FILE NAME: 531-317_xVAbord

DRAWING TITLE: MECHANICAL CONTROLS
PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT
DATE: 11/01/2011
PROJECT NO.: 531-317
APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE
BUILDING NUMBER: 85
CHECKED: JB
DRAWN: JA
DRAWING NO.: M5.2
APPROVED: MEDICAL CENTER DIRECTOR
LOCATION: VAMC BOISE, IDAHO
DWG 113 OF 188

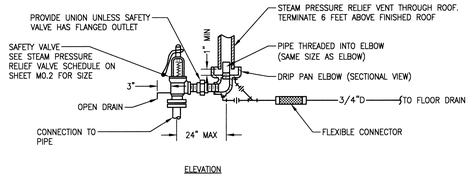
DEPARTMENT OF VETERANS AFFAIRS



1 DUCT MOUNTED RE-HEAT COIL TRANSITION DETAIL
NTS

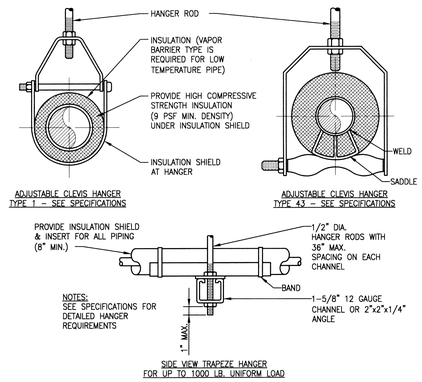


2 STEAM HUMIDIFIER PIPING CONNECTION DETAIL
NTS



ELEVATION

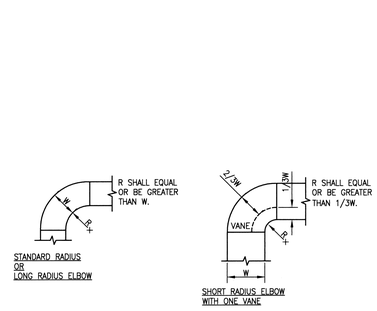
3 STEAM SAFETY RELIEF VALVE DETAIL
NTS



MAXIMUM PIPE/TUBING SUPPORT SPACING																	
NOM. SIZE (IN)	THRU 3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	8	10	12	14	16	18	20	24
PIPE (FT)	7	7	7	9	10	11	12	14	16	17	19	22	23	25	27	28	30	32
TUBING (FT)	5	6	7	8	8	9	10	12	13	14	16	–	–	–	–	–	–	–

NOTE: FOR TRAPEZE HANGER TAKE SPACING OF SMALLEST SIZE ON TRAPEZE.

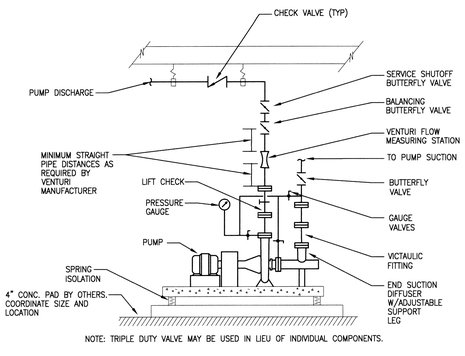
4 PIPE HANGER SUPPORT DETAIL
NTS



NOTE:

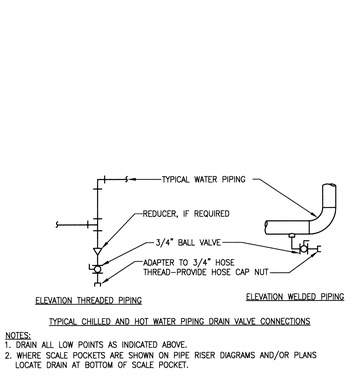
1. THE INTERIOR SURFACE OF ALL RADIUS ELBOWS SHALL BE MADE ROUND.
2. ALL STANDARD RADIUS ELBOWS CAN BE SUBSTITUTED WITH SHORT RADIUS ELBOWS. ALL SHORT RADIUS ELBOWS SHALL HAVE VANES. VANES SHALL BE CONSTRUCTED, SUPPORTED AND FASTENED AS RECOMMENDED BY SMACNA.

5 DUCTWORK RADIUS ELBOW DETAIL
NTS



NOTE: TRIPLE DUTY VALVE MAY BE USED IN LIEU OF INDIVIDUAL COMPONENTS.

6 END SUCTION PUMP PIPING CONNECTION DETAIL
NTS

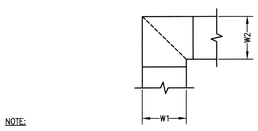


NOTES:
1. DRAIN ALL LOW POINTS AS INDICATED ABOVE.
2. WHERE SCALE POCKETS ARE SHOWN ON PIPE RISER DIAGRAMS AND/OR PLANS LOCATE DRAIN AT BOTTOM OF SCALE POCKET.

NOTES:
1. VENT ALL HIGH POINTS INDICATED ABOVE.
2. IF AUTOMATIC AIR VENTS ARE USED, PIPE DISCHARGE TO DRAIN.

7 DRAIN VALVE AND AIR VENT CONNECTION (HYDRONIC SYSTEMS) DETAIL
NTS

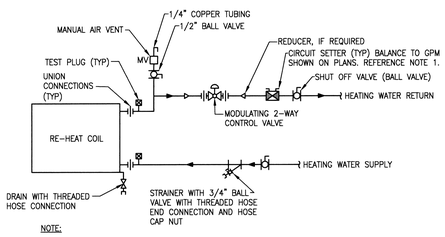
8 LINEAR AIR SLOT DIFFUSER DETAIL
NTS



NOTE:

1. ALL VANE ELBOWS SHALL BE CONSTRUCTED AND INSTALLED AS DETAILED BY SMACNA.
2. WHEN "W1" DOES NOT EQUAL "W2", VANE SHALL BE SINGLE THICKNESS VANE TYPE REGARDLESS OF "W" DIMENSION.
3. ALL SINGLE THICKNESS VANES SHALL HAVE A 2" RADIUS, 1 1/2" MAXIMUM SPACE BETWEEN VANES AND A 3/4" TRAILING EDGE.
4. WHEN W EQUALS W2 AND W1 IS GREATER THAN 20" VANES SHALL BE DOUBLE VANE TYPE.

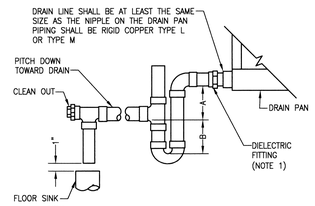
9 DUCTWORK SQUARE VANE ELBOW DETAIL
NTS



NOTE:

1. PROVIDE A MINIMUM OF 7 PIPE DIAMETERS OF STRAIGHT PIPE DOWNSTREAM AND A MINIMUM OF 4 PIPE DIAMETERS OF STRAIGHT PIPE UP STREAM OF CIRCUIT SETTER TO ALLOW FOR VALID PRESSURE DROP READING.
2. FLEXIBLE HOSE CONNECTIONS AND VAV PIPING PACKAGES SHALL NOT BE USED.

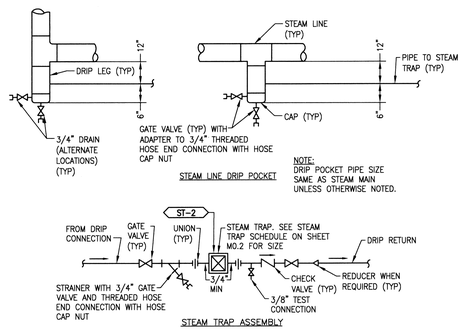
10 RE-HEAT COIL PIPING CONNECTION DETAIL
NTS



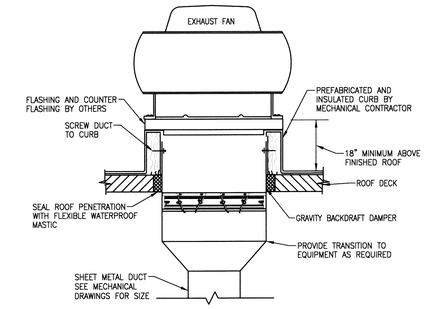
NOTE:
1. DIELECTRIC FITTING TO BE USED WHEN TWO DISSIMILAR METALS ARE TO BE CONNECTED.

EQUIPMENT	A	B
AHU-15	8"	6"
AHU-16	9"	7"
EF-26,27,28	6"	4"
FCU-47	1"	1/2"

11 EQUIPMENT CONDENSATE DRAIN TRAP DETAIL
NTS



12 STEAM DRIP POCKET AND TRAP DETAIL
NTS



13 UPBLAST EXHAUST FAN DETAIL
NTS

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 6/30/15 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

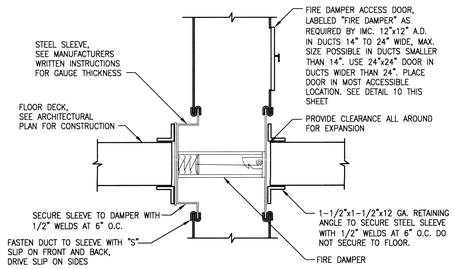
CAD FILE NAME: 531-317-M60
XREF FILE NAME: 531-317_xVAbord

DRAWING TITLE: MECHANICAL DETAILS
APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE
APPROVED: MEDICAL CENTER DIRECTOR

PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT
BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA
LOCATION: VAMC BOISE, IDAHO

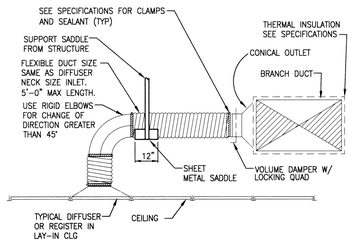
DATE: 11/01/2011
PROJECT NO.: 531-317
DRAWING NO.: M6.0
DWG 114 OF 188

FOR CONSTRUCTION
DEPARTMENT OF VETERANS AFFAIRS



1 FLOOR MOUNTED FIRE DAMPER DETAIL

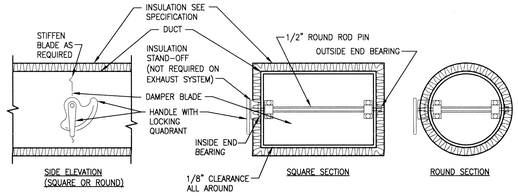
NTS



NOTE:
THE USE OF FLEXIBLE AIR DUCT CONNECTORS ARE NOT PERMITTED FOR DIFFUSERS/REGISTERS SERVING THE SURGICAL SUITE.

2 FLEXIBLE AIR DUCT CONNECTOR DETAIL

NTS

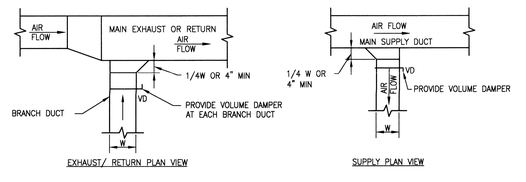


NOTE:

1. DELETE INSULATION STAND-OFF ON DUCTWORK WITHOUT EXTERIOR INSULATION.
2. DETAIL SHOWS SINGLE BLADE DAMPER. DAMPER INSTALLATION SHALL BE SIMILAR FOR MULTI-BLADE DAMPERS & ROUND DAMPERS.

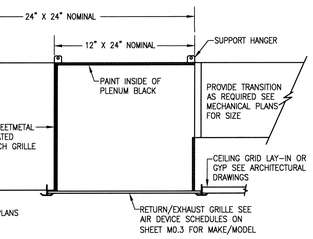
3 MANUAL VOLUME DAMPER DETAIL

NTS



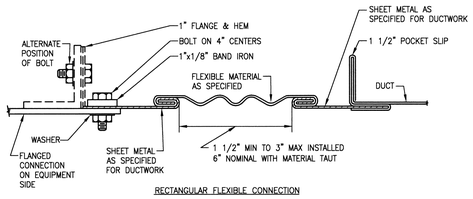
4 BRANCH DUCTWORK AND TAKE-OFF DETAIL

NTS

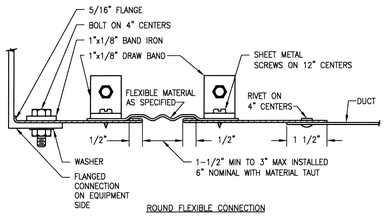


RETURN/EXHAUST GRILLE WITH FIELD FABRICATED PLENUM DETAIL

NTS



RECTANGULAR FLEXIBLE CONNECTION

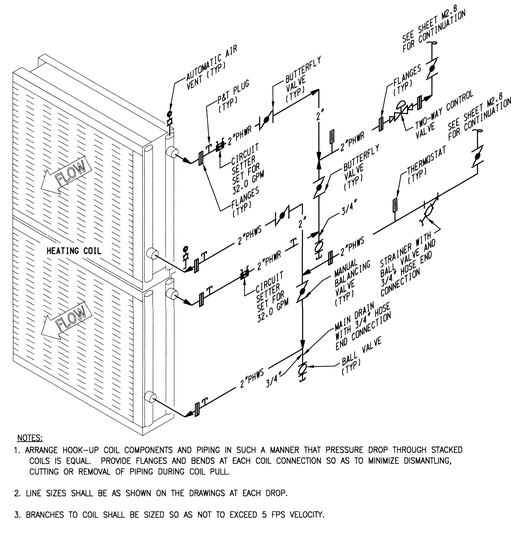


ROUND FLEXIBLE CONNECTION

NOTE:
1. ACROSS BUILDING EXPANSION JOINTS OMIT FLANGED CONNECTION SIDE SHOWN AND MATCH POCKET SLIP CONSTRUCTION SHOWN FOR BOTH CONNECTIONS TO FLEXIBLE MATERIAL.

6 FLEXIBLE DUCT CONNECTION DETAIL

NTS

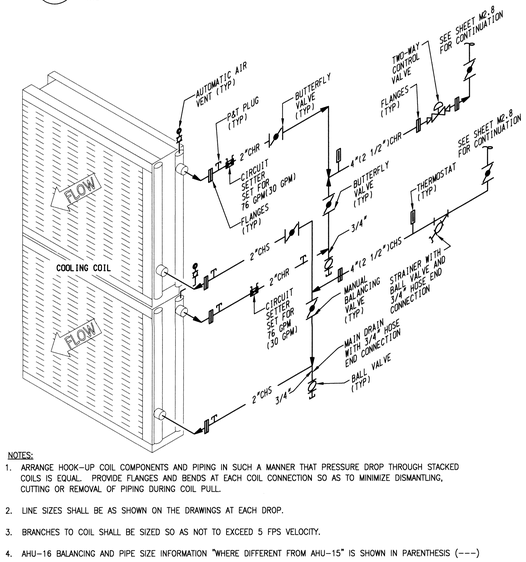


NOTES:

1. ARRANGE HOOK-UP COIL COMPONENTS AND PIPING IN SUCH A MANNER THAT PRESSURE DROP THROUGH STACKED COILS IS EQUAL. PROVIDE FLANGES AND BENDS AT EACH COIL CONNECTION SO AS TO MINIMIZE DISMANTLING, CUTTING OR REMOVAL OF PIPING DURING COIL PULL.
2. LINE SIZES SHALL BE AS SHOWN ON THE DRAWINGS AT EACH DROP.
3. BRANCHES TO COIL SHALL BE SIZED SO AS NOT TO EXCEED 5 FPS VELOCITY.

7 PRE-HEAT COIL PIPING CONNECTION DETAIL (AHU-15)

NTS

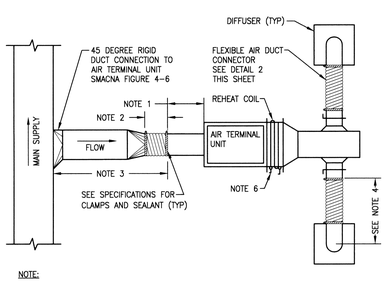


NOTES:

1. ARRANGE HOOK-UP COIL COMPONENTS AND PIPING IN SUCH A MANNER THAT PRESSURE DROP THROUGH STACKED COILS IS EQUAL. PROVIDE FLANGES AND BENDS AT EACH COIL CONNECTION SO AS TO MINIMIZE DISMANTLING, CUTTING OR REMOVAL OF PIPING DURING COIL PULL.
2. LINE SIZES SHALL BE AS SHOWN ON THE DRAWINGS AT EACH DROP.
3. BRANCHES TO COIL SHALL BE SIZED SO AS NOT TO EXCEED 5 FPS VELOCITY.
4. AHU-16 BALANCING AND PIPE SIZE INFORMATION "WHERE DIFFERENT FROM AHU-15" IS SHOWN IN PARENTHESIS (---)

8 COOLING COIL PIPING CONNECTION DETAIL (AHU-15 AND 16)

NTS

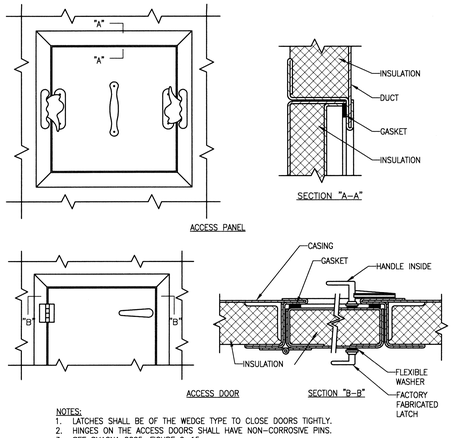


NOTE:

1. RIGID STRAIGHT TERMINAL UNIT INLET LENGTH SHALL BE A MINIMUM OF 3 TIMES THE DIAMETER OF INLET
2. A FLEXIBLE AIR DUCT CONNECTOR IS NOT MANDATORY FOR INLET TO THIS BOX, BUT ALLOWED TO ACCOMMODATE MINOR OFFSETS. MAXIMUM LENGTH 3'-0".
3. A BRANCH DUCT SERVING AN INDIVIDUAL BOX MAY BE THE SAME SIZE AS THE BOX INLET, PROVIDED THE EQUIVALENT LENGTH OF THE BRANCH DUCT, AS SHOWN, DOES NOT EXCEED 10 FEET. FOR LONGER LENGTHS, INCREASE THE DUCT SIZE AND PROVIDE A DUCT TRANSITION TO MAINTAIN THE DUCT STATIC PRESSURE DROP AT OR BELOW 0.2"/100'.
4. FLEXIBLE AIR DUCT CONNECTORS, WHEN USED FROM TERMINAL UNIT SUPPLY AIR DUCT TO DIFFUSER, SHALL NOT EXCEED 5'-0". USE RIGID ELBOWS FOR CHANGE OF DIRECTION GREATER THAN 45°.
5. USE OF THE FLEXIBLE AIR DUCT CONNECTORS ARE NOT PERMITTED FOR DUCTWORK SERVING SURGICAL SUITES AND/OR AREA'S OVER HARD LID CEILING CONSTRUCTION.
6. SET-UP ARRANGEMENT ALSO TYPICAL FOR FLOW CONTROL VALVES WITH RE-HEAT.

9 TERMINAL UNIT DUCT CONNECTION DETAIL

NTS

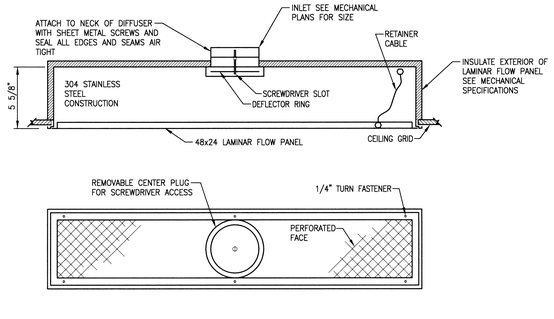


NOTES:

1. LATCHES SHALL BE OF THE WEDGE TYPE TO CLOSE DOORS TIGHTLY.
2. HINGES ON THE ACCESS DOORS SHALL HAVE NON-CORROSIVE PINS.
3. SEE SMACNA 2005, FIGURE 9-15

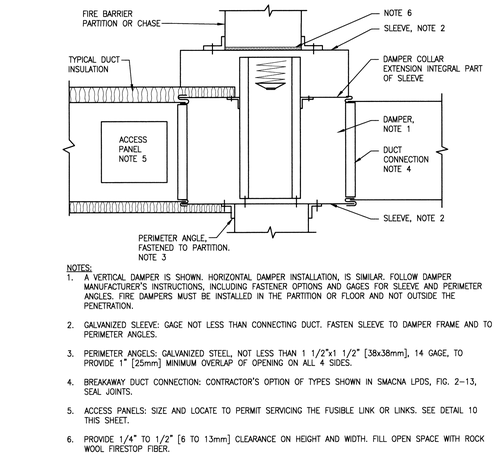
10 ACCESS PANEL AND DOOR DETAIL

NTS



11 LAMINAR FLOW DIFFUSER DETAIL

NTS



NOTES:

1. A VERTICAL DAMPER IS SHOWN. HORIZONTAL DAMPER INSTALLATION, IS SIMILAR. FOLLOW DAMPER MANUFACTURER'S INSTRUCTIONS, INCLUDING FASTENER OPTIONS AND GAGES FOR SLEEVE AND PERIMETER ANGLES. FIRE DAMPERS MUST BE INSTALLED IN THE PARTITION OR FLOOR AND NOT OUTSIDE THE PENETRATION.
2. GALVANIZED SLEEVE: GAGE NOT LESS THAN CONNECTING DUCT. FASTEN SLEEVE TO DAMPER FRAME AND TO PERIMETER ANGLES.
3. PERIMETER ANGELS: GALVANIZED STEEL, NOT LESS THAN 1 1/2"x1 1/2" [38x38mm], 14 GAGE, TO PROVIDE 1" [25mm] MINIMUM OVERLAP OF OPENING ON ALL 4 SIDES.
4. BREAKAWAY DUCT CONNECTION: CONTRACTOR'S OPTION OF TYPES SHOWN IN SMACNA LPDS, FIG. 2-13, SEAL JOINTS.
5. ACCESS PANELS: SIZE AND LOCATE TO PERMIT SERVICING THE FUSIBLE LINK OR LINKS. SEE DETAIL 10 THIS SHEET.
6. PROVIDE 1/4" TO 1/2" [6 TO 13mm] CLEARANCE ON HEIGHT AND WIDTH. FILL OPEN SPACE WITH ROCK WOOL FIRESTOP FIBER.
7. ALL DUCT WORK RISERS WHICH ARE RUN EXPOSED, SUCH AS THRU ATTIC FLOORS AND MECHANICAL ROOM FLOORS, SHALL BE PROVIDED WITH 3" [76mm] HIGH CONCRETE CURB AROUND OPENING FOR DUCT.

12 WALL MOUNTED FIRE DAMPER DETAIL

NTS

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 12/31 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

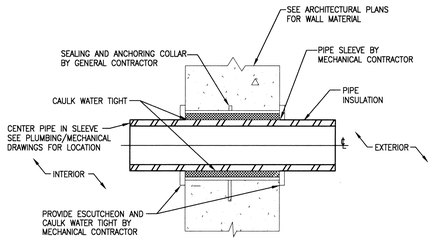
CAD FILE NAME: 531-317-M61
XREF FILE NAME: 531-317_xVAbord

DRAWING TITLE: MECHANICAL DETAILS
APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE
APPROVED: MEDICAL CENTER DIRECTOR

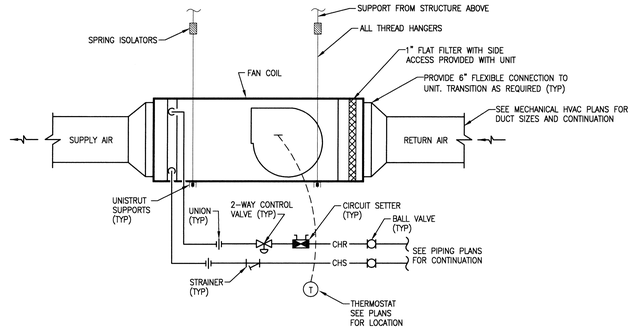
PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT
BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA
LOCATION: VAMC BOISE, IDAHO

DATE: 11/01/2011
PROJECT NO.: 531-317
DRAWING NO.: M6.1
DWG 115 OF 188

FOR CONSTRUCTION
DEPARTMENT OF VETERANS AFFAIRS

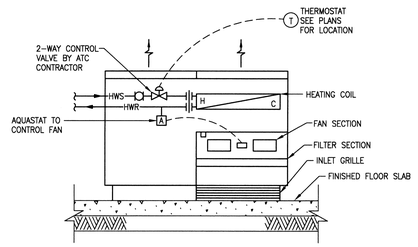


1 PIPE THROUGH EXTERIOR WALL DETAIL
NTS

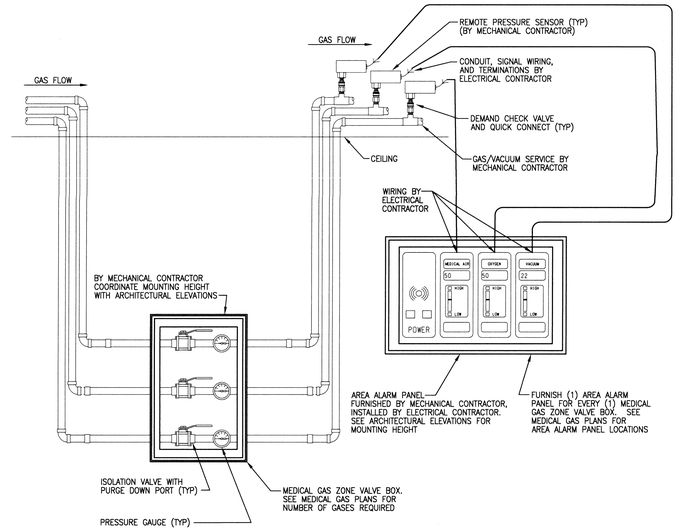


NOTE:
1. PROVIDE CONDENSATE PIPING AND TRAP PACKAGE FOR CONDENSATE DRAIN CONNECTION FROM UNIT DRAIN. DISCHARGE CONDENSATE TO SANITARY SEWER SYSTEM ABOVE FINISHED CEILING.

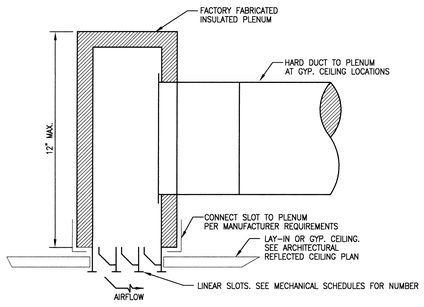
2 FAN COIL UNIT DETAIL
NTS



3 FLOOR MOUNTED CABINET UNIT HEATER PIPING CONNECTION DETAIL
NTS

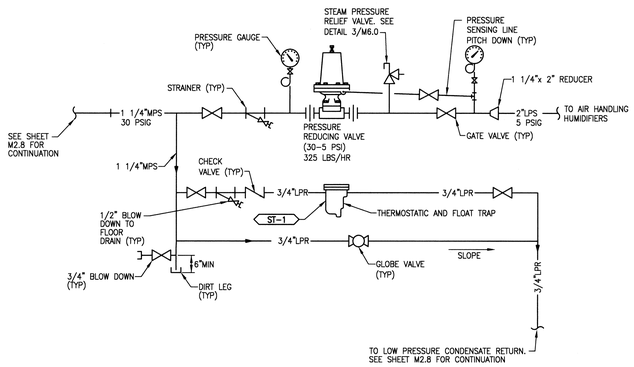


4 MEDICAL GAS ZONE VALVE BOX DETAIL
NTS

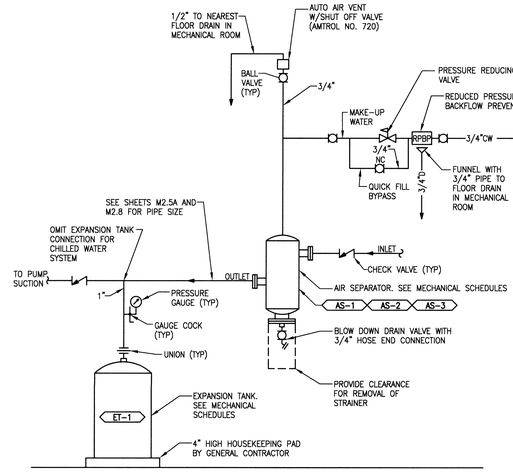


NOTE:
1. POSITION SLOT TO WASH EXTERIOR WALL WHEN SINGLE SLOT IS USED. WHEN MULTIPLE SLOTS ARE PROVIDED, POSITION SLOTS FOR BI-DIRECTIONAL AIRFLOW.

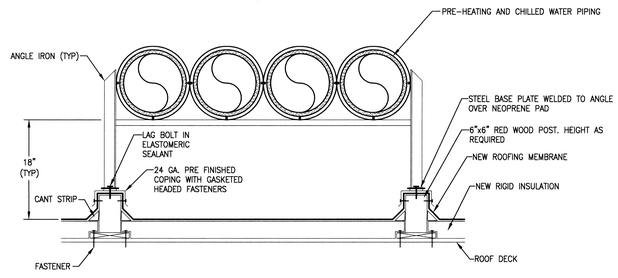
5 LINEAR SUPPLY DIFFUSER DETAIL
NTS



6 STEAM PRESSURE REDUCING STATION DETAIL
NTS



7 AIR SEPARATOR AND EXPANSION TANK DETAIL
NTS



NOTE:
1. COORDINATE PIPE SUPPORT DESIGN WITH EXISTING PIPE SUPPORT STRUCTURE. CONTRACTOR SHALL FIELD VERIFY AND SUBMIT PROPOSAL FOR REVIEW BY VA COTR AND ENGINEER.

8 PIPING ON ROOF DECK SUPPORT DETAIL
NTS

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 KELLY WOODS STATE OF IDAHO

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317-M62
XREF FILE NAME: 531-317_xVAbord

DRAWING TITLE: MECHANICAL DETAILS

APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE

APPROVED: MEDICAL CENTER DIRECTOR

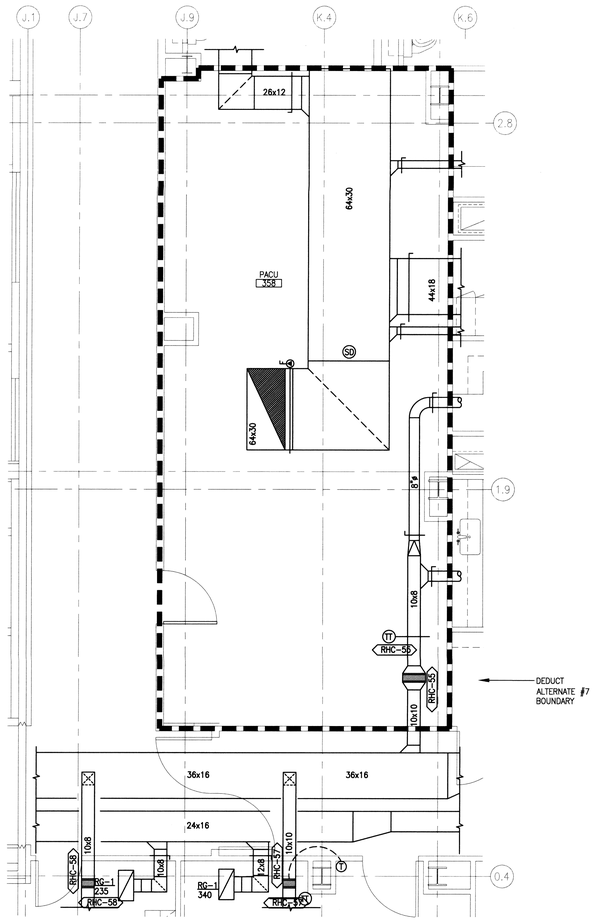
PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT

BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA

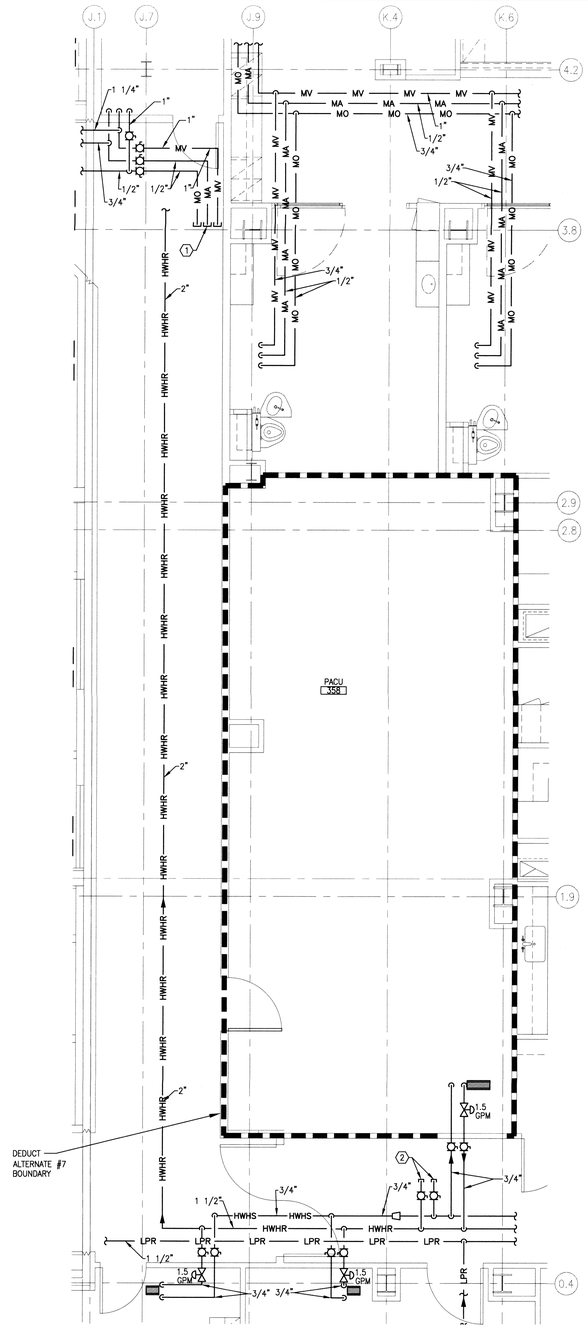
LOCATION: VAMC BOISE, IDAHO

DATE: 11/01/2011
PROJECT NO.: 531-317
DRAWING NO.: M6.2
DWG 116 OF 188

FOR CONSTRUCTION
DEPARTMENT OF VETERANS AFFAIRS



M10 BUILDING 85 – DEDUCT ALTERNATE #7 THIRD FLOOR HVAC PLAN
SCALE: 1/4" = 1'-0"



M10 BUILDING 85 – DEDUCT ALTERNATE #7 THIRD FLOOR MEDICAL GAS AND HYDRONICS PLAN
SCALE: 1/4" = 1'-0"

DEDUCT ALTERNATE #7 DEMOLITION NARRATIVE

HVAC

A. OMIT RETURN AND SUPPLY AIR DUCTWORK ALONG WITH ASSOCIATED CONTROLS SERVING PACU 358.

B. OMIT SUPPLY AIR DIFFUSERS, DUCTWORK AND ASSOCIATED BALANCING DAMPERS SERVING PUBLIC CORRIDOR C42.

HYDRONICS

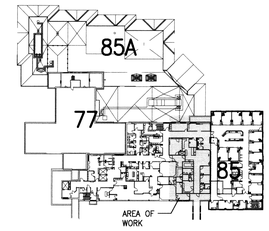
A. OMIT REHEAT COIL RHC-56, ASSOCIATED PIPING AND VALVES SERVING PACU 358.

MEDICAL GAS

A. OMIT MEDICAL GAS PIPING, WALL OUTLETS, REMOTE PRESSURE SENSORS, ZONE VALVE ASSEMBLY AND AREA ALARM PANEL SERVING PACU 358.

SHEET KEYNOTES

1. CAP MEDICAL GASES FOR FUTURE PACU SERVICE.
2. CAP HYDRONICS FOR FUTURE PACU SERVICE.



THIRD FLOOR KEY PLAN
NOT TO SCALE

PLAN NORTH

PLAN NORTH 0 2' 4' 8'

REVISIONS | DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME:
531-317_M100A

XREF FILE NAME:
85A3FI_ALT
85M3HV_ALT
85P3MG_ALT
531-317_xVAbord

DRAWING TITLE
DEDUCT ALTERNATE #7
THIRD FLOOR
HVAC DEMOLITION PLAN

APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE

APPROVED: MEDICAL CENTER DIRECTOR

PROJECT TITLE
REPLACE AND MODERNIZE
SURGERY / INTENSIVE
CARE UNIT

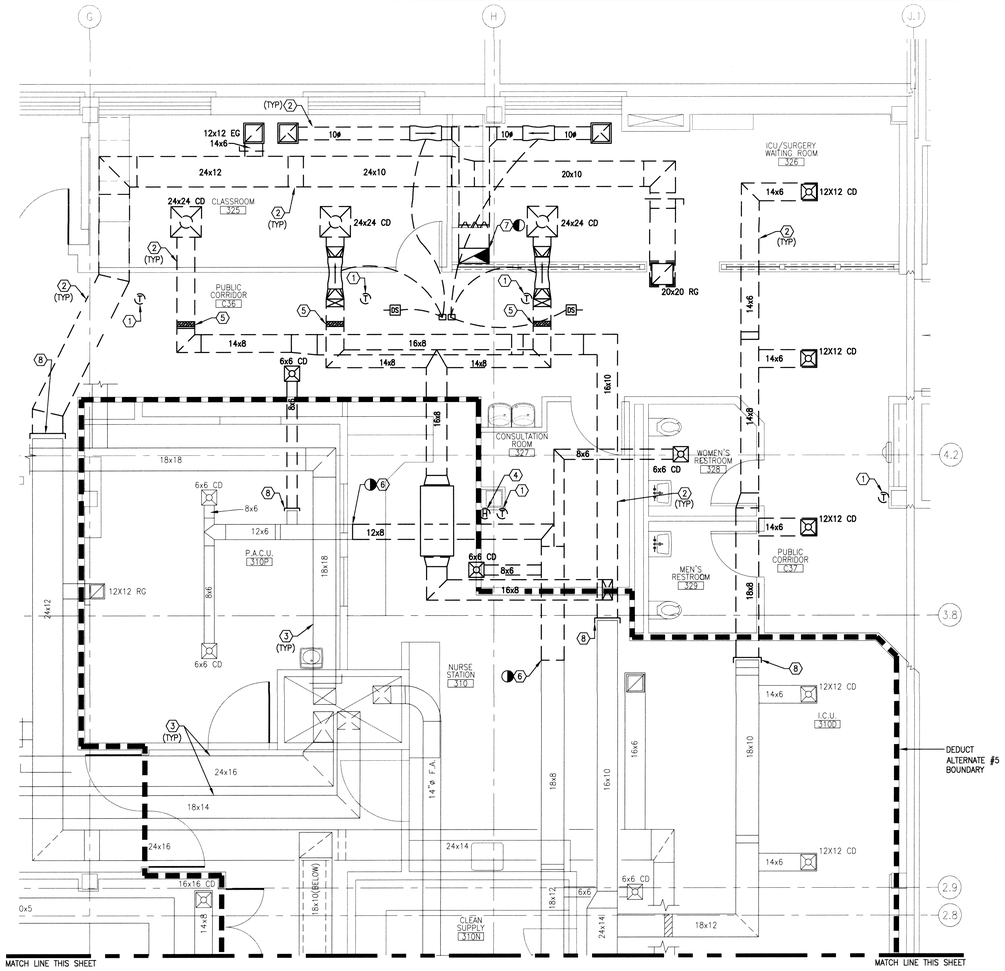
BUILDING NUMBER 85 | CHECKED JB | DRAWN JA

LOCATION
VAMC BOISE, IDAHO

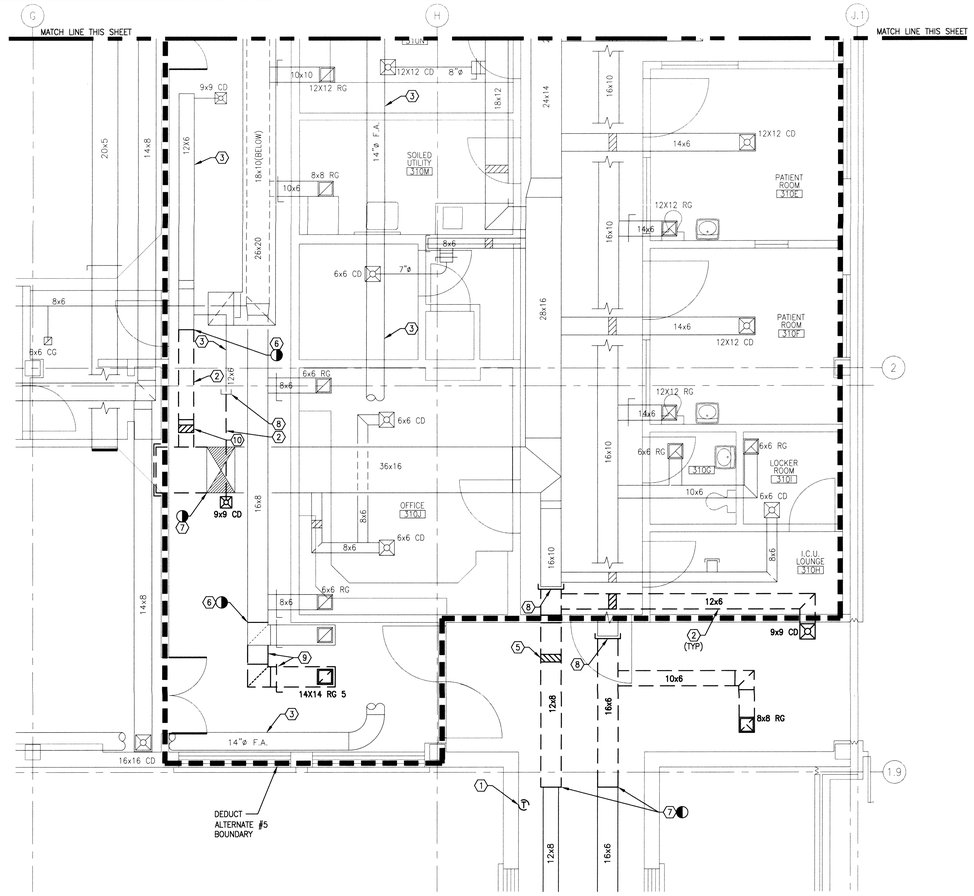
DATE 11/01/2011
PROJECT NO. 531-317
DRAWING NO. M10.0
DWG 117 OF 188

FOR CONSTRUCTION

DEPARTMENT OF VETERANS AFFAIRS



M10 BUILDING 85 – DEDUCT ALTERNATE #5 THIRD FLOOR HVAC DEMOLITION PLAN
SCALE: 1/4" = 1'-0"



M10 BUILDING 85 – DEDUCT ALTERNATE #5 THIRD FLOOR HVAC DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

DEDUCT ALTERNATE #5 HVAC DEMOLITION NARRATIVE

A. REMOVE SUPPLY AND EXHAUST DUCTWORK AND ASSOCIATED CONTROLS SERVING EXISTING PATIENT ROOMS 310A, 310B, 310C, AND ICU LOUNGE 310H.

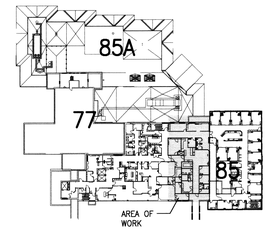
B. REMOVE SECTION OF SUPPLY AND RETURN DUCTWORK AND ASSOCIATED CONTROLS SERVING EXISTING NURSE STATION 310 AND ICU 310D.

C. REMOVE PARTIAL SUPPLY DUCTWORK ASSOCIATED REHEAT COIL. REMOVE AND RELOCATE PARTIAL DUCTWORK SERVING CLEAN CORRIDOR C33.

D. REMOVE PARTIAL SECTION OF SUPPLY DUCTWORK SERVING PACU 310 P.

SHEET KEYNOTES

1. REMOVE WALL THERMOSTAT AND ASSOCIATED CONTROL WIRING.
2. REMOVE DUCTWORK SHOWN BOLD AND DASHED ALONG WITH ASSOCIATED BALANCING DAMPERS, GRILLES / DIFFUSERS AND INSULATION.
3. EXISTING DUCT SHOWN LIGHT IS TO REMAIN.
4. REMOVE WALL HUMIDISTAT AND ASSOCIATED CONTROL WIRING.
5. REMOVE EXISTING IN-LINE DUCT HEATING COIL. COORDINATE COIL REMOVAL WITH PLUMBING CONTRACTOR.
6. REMOVE EXISTING DUCTWORK BACK TO THIS POINT. SEE SHEET M10.1B FOR NEW WORK.
7. REMOVE EXISTING DUCTWORK BACK TO THIS POINT. SEE SHEET M2.2B FOR NEW WORK.
8. CAP EXISTING DUCTWORK.
9. REMOVE AND RELOCATE EXISTING DUCTWORK, ASSOCIATED GRILLE AND BALANCING DAMPER.
10. REMOVE AND RELOCATE EXISTING REHEAT COIL SEE SHEET M10.1B FOR NEW WORK.



THIRD FLOOR KEY PLAN
NOT TO SCALE

PLAN NORTH 0 2' 4' 8'

PLAN NORTH

FOR CONSTRUCTION

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

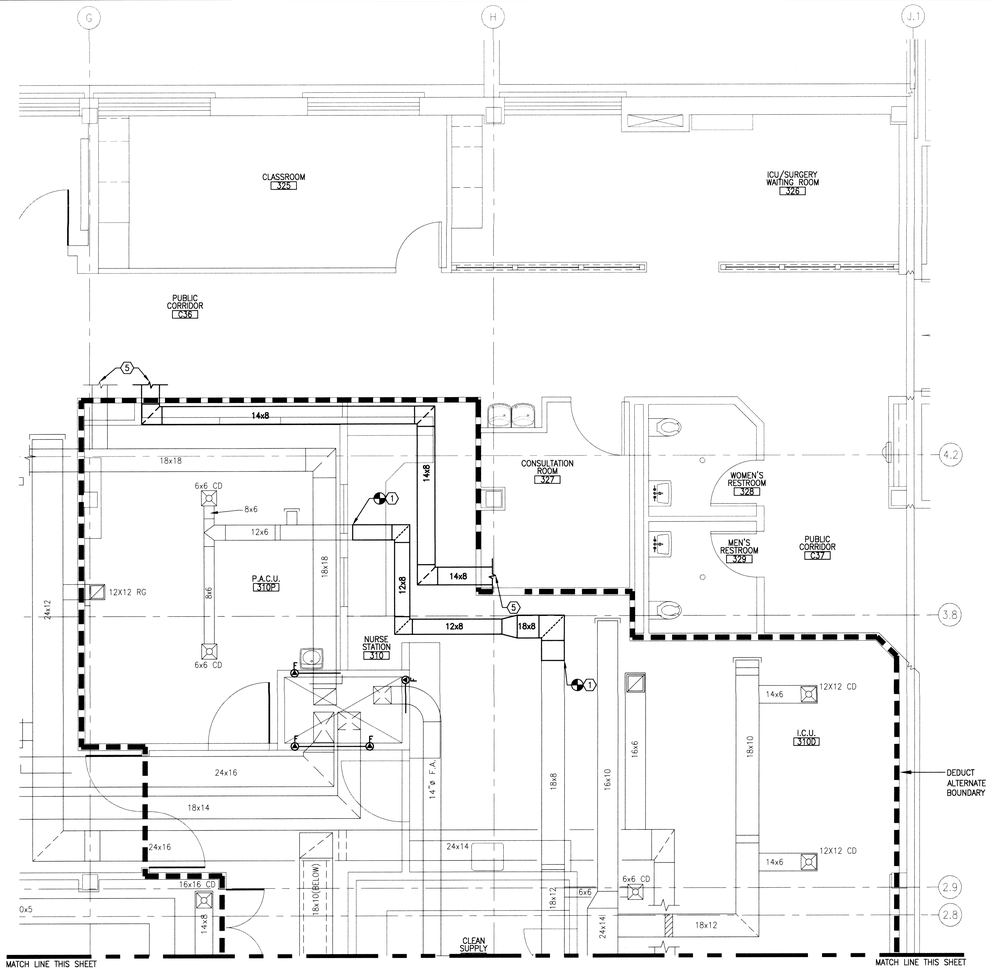
ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317_M101A

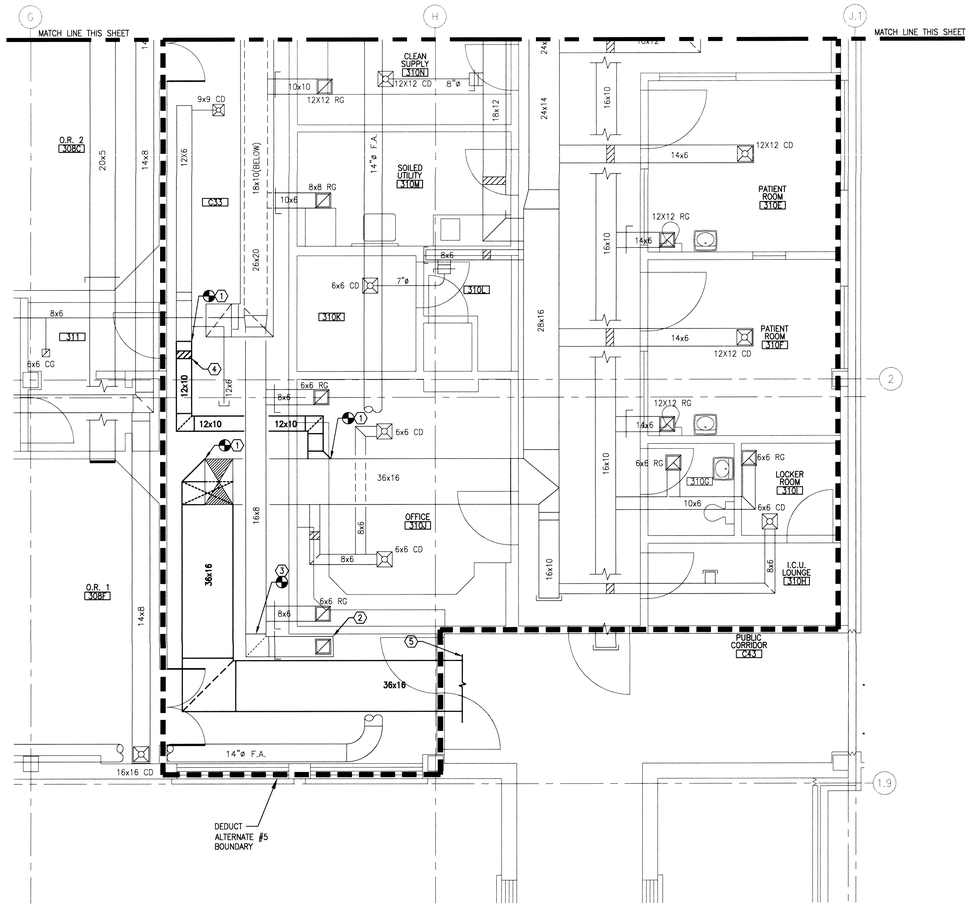
XREF FILE NAME: 85A3FL_ALT, 85M3HV_ALT, 531-317_xVAbord

DRAWING TITLE: DEDUCT ALTERNATE #5 THIRD FLOOR HVAC DEMOLITION PLAN	PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT		DATE: 11/01/2011
APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE	BUILDING NUMBER: 85	CHECKED: JB / DRAWN: JA	PROJECT NO.: 531-317
APPROVED: MEDICAL CENTER DIRECTOR	LOCATION: VAMC BOISE, IDAHO		DRAWING NO.: M10.1A
			DWG 118 OF 188

DEPARTMENT OF VETERANS AFFAIRS



M10 BUILDING 85 – DEDUCT ALTERNATE #5 THIRD FLOOR HVAC REMODEL PLAN
SCALE: 1/4" = 1'-0"



M10 BUILDING 85 – DEDUCT ALTERNATE #5 THIRD FLOOR HVAC REMODEL PLAN
SCALE: 1/4" = 1'-0"

DEDUCT ALTERNATE #5 HVAC REMODEL NARRATIVE

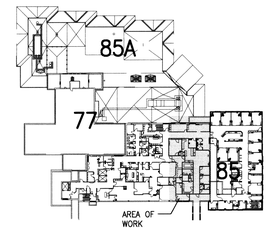
A. ADD NEW SUPPLY DUCTWORK TO SERVE EXISTING PACU 310P.

B. RELOCATE EXISTING RETURN DUCTWORK, GRILLE AND BALANCING DAMPER SERVING CLEAN CORRIDOR C33.

C. ADD NEW SUPPLY DUCTWORK AND RELOCATE EXISTING INLINE RE-HEAT COIL SERVING CLEAN CORE C33.

SHEET KEYNOTES

1. CONNECT TO EXISTING DUCTWORK WITH NEW AT THIS LOCATION.
2. RELOCATED EXISTING RETURN DUCT AND GRILLE.
3. CONNECT TO EXISTING DUCTWORK.
4. RELOCATED REHEAT COIL. SEE SHEET M10.2B FOR HYDRONICS.
5. SEE SHEET M2.2A AND/OR M2.2B FOR CONTINUATION.



THIRD FLOOR KEY PLAN
NOT TO SCALE

PLAN NORTH

0 2' 4' 8'

PLAN NORTH

FOR CONSTRUCTION

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

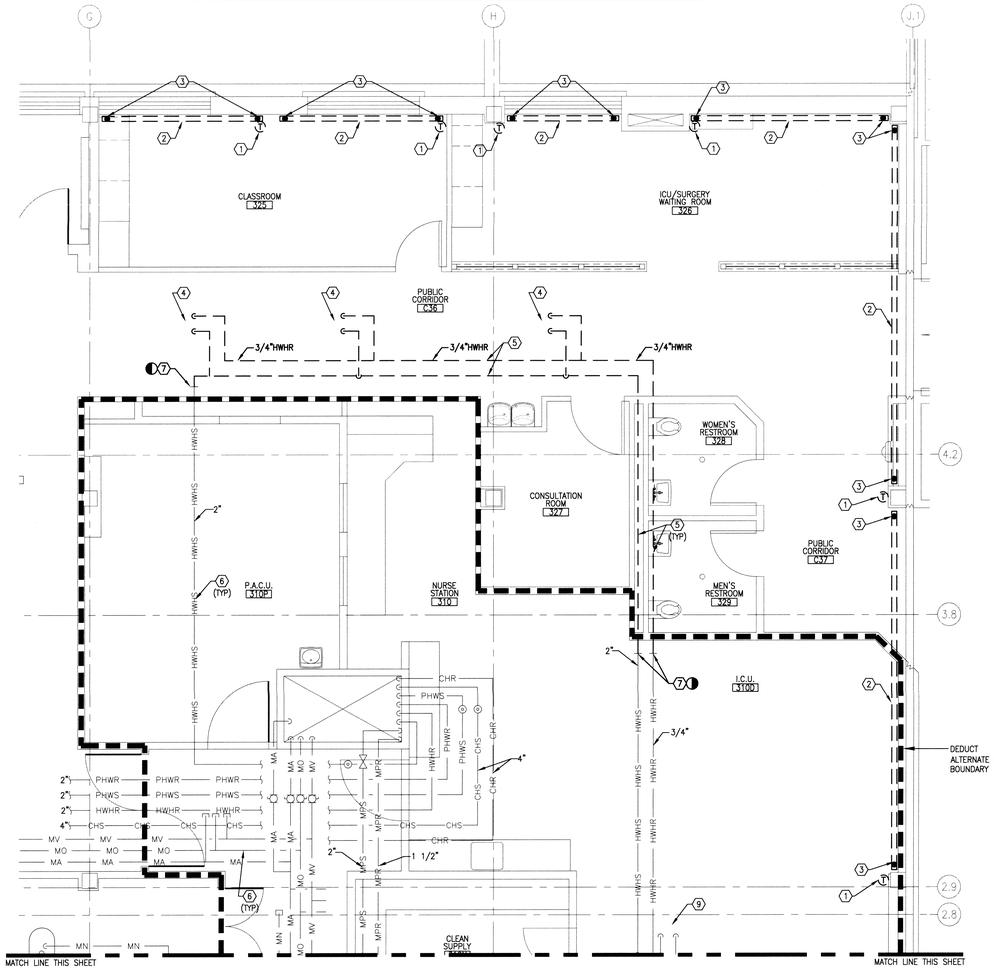
ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME:
531-317_M101B

XREF FILE NAME:
85A3FL_ALT
85M3HV_ALT
531-317_xVAbord

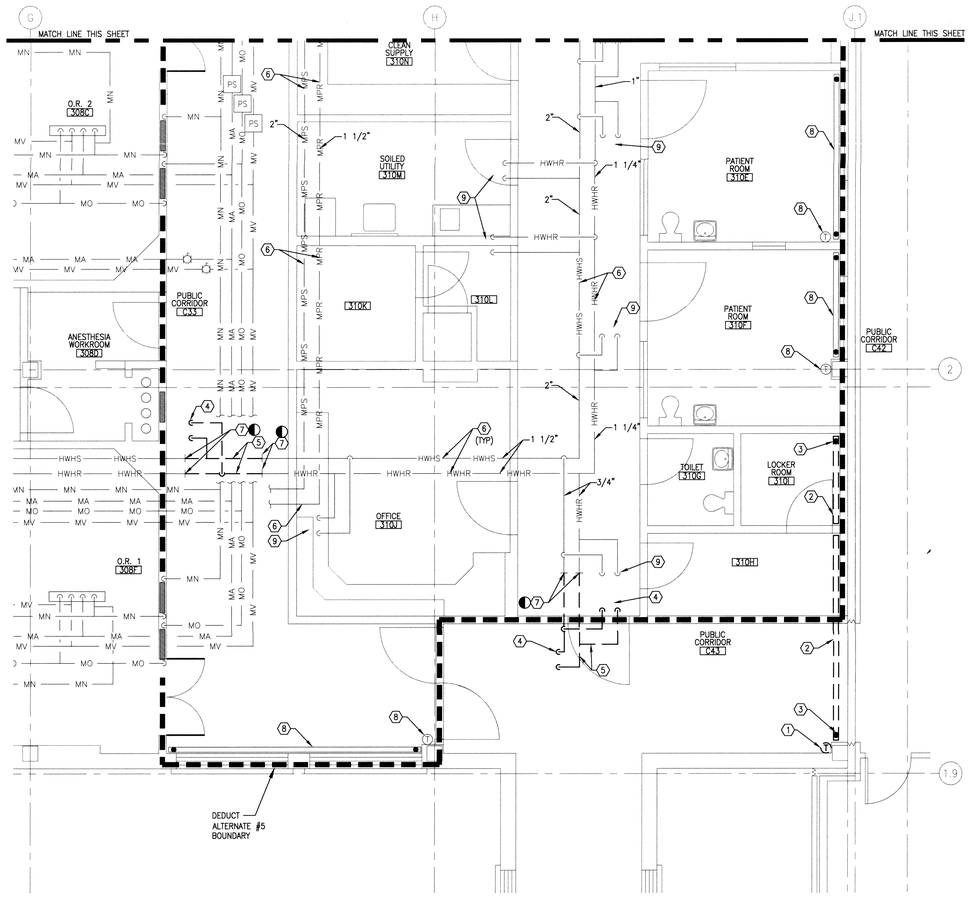
DRAWING TITLE	DEDUCT ALTERNATE #5 THIRD FLOOR HVAC REMODEL PLAN
PROJECT TITLE	REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT
DATE	11/01/2011
PROJECT NO.	531-317
APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE	
BUILDING NUMBER	85
CHECKED	JB
DRAWN	JA
DRAWING NO.	M10.1B
APPROVED: MEDICAL CENTER DIRECTOR	
LOCATION	VAMC BOISE, IDAHO
DWG	119 OF 188

DEPARTMENT OF VETERANS AFFAIRS



BUILDING 85 – DEDUCT ALTERNATE #5 THIRD FLOOR MEDICAL GAS AND MECHANICAL PIPING DEMOLITION PLAN

M10 SCALE: 1/4" = 1'-0"



BUILDING 85 – DEDUCT ALTERNATE #5 THIRD FLOOR MEDICAL GAS AND MECHANICAL PIPING DEMOLITION PLAN

M10 SCALE: 1/4" = 1'-0"

DEDUCT ALTERNATE #5 DEMOLITION NARRATIVE

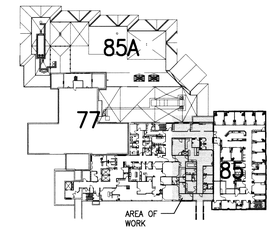
A. REMOVE EXISTING BASEBOARD HEATERS, INLINE DUCT COILS AND ASSOCIATED HYDRONIC PIPING SERVING PATIENT ROOMS 310A, 310B, 310C AND ICU LOUNGE 310H.

B. REMOVE PORTION OF HEATING WATER SUPPLY AND RETURN PIPING OVER EXISTING NURSE STATION 310 AND ICU 310D.

C. REMOVE AND RELOCATE EXISTING IN-LINE RE-HEAT COIL SERVING CLEAN CORE C33.

SHEET KEYNOTES

1. REMOVE WALL THERMOSTAT SERVING BASEBOARD HEATER AND ASSOCIATED CONTROL WIRING.
2. REMOVE BASEBOARD HEATER.
3. REMOVE HYDRONIC HEATING WATER SUPPLY / RETURN PIPING SERVING BASEBOARD HEATER BACK TO SECOND FLOOR AND CAP AT MAIN DISTRIBUTION HEADER. PATCH AND SEAL EXISTING FLOOR PENETRATIONS TO MAINTAIN EXISTING FIRE RATING. COORDINATE FLOOR REPAIR WORK WITH GENERAL CONTRACTOR AND ARCHITECTURAL DRAWINGS.
4. REMOVE HYDRONIC HEATING WATER SUPPLY / RETURN PIPING ALONG WITH ASSOCIATED CONTROL / ISOLATION VALVES, STRAINERS AND TEST PORT WELLS. REMOVE ASSOCIATED CONTROL WIRING ASSOCIATED WITH CONTROL VALVE ASSEMBLY. COORDINATE WIRING REMOVAL WITH ELECTRICAL CONTRACTOR AND REMOVAL OF PIPING WITH MECHANICAL HVAC CONTRACTOR.
5. REMOVE HYDRONIC PIPING SHOWN BOLD AND DASHED ALONG WITH ASSOCIATED INSULATION.
6. EXISTING HYDRONIC PIPING SHOWN LIGHT IS TO REMAIN.
7. REMOVE EXISTING HYDRONIC PIPING BACK TO THIS POINT. SEE SHEET M10.2B FOR NEW WORK.
8. EXISTING BASEBOARD HEATER AND ASSOCIATED PIPING AND THERMOSTAT TO REMAIN.
9. EXISTING DUCT RE-HEAT COIL AND ASSOCIATED PIPING TO REMAIN.
10. CAP EXISTING PIPING AT THIS LOCATION.



THIRD FLOOR KEY PLAN
NOT TO SCALE

PLAN NORTH

PLAN NORTH 0 2' 4' 8'

FOR CONSTRUCTION

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317_M102A

XREF FILE NAME: 85A3FI_ALT 85P3HV_ALT

DRAWING TITLE: DEDUCT ALTERNATE #5 THIRD FLOOR MEDICAL GAS AND MECH PIPING DEMOLITION PLAN

PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT

DATE: 11/01/2011

PROJECT NO.: 531-317

APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE

APPROVED: MEDICAL CENTER DIRECTOR

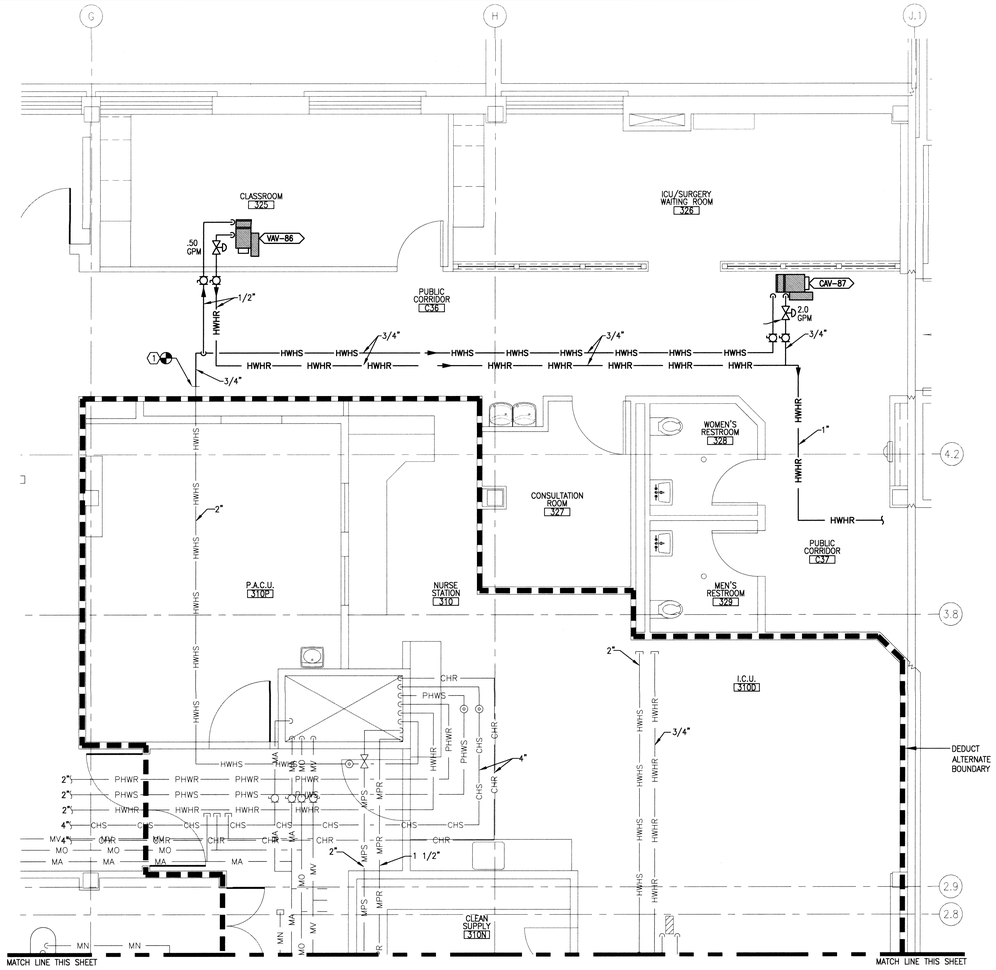
BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA

LOCATION: VAMC BOISE, IDAHO

DRAWING NO.: M10.2A

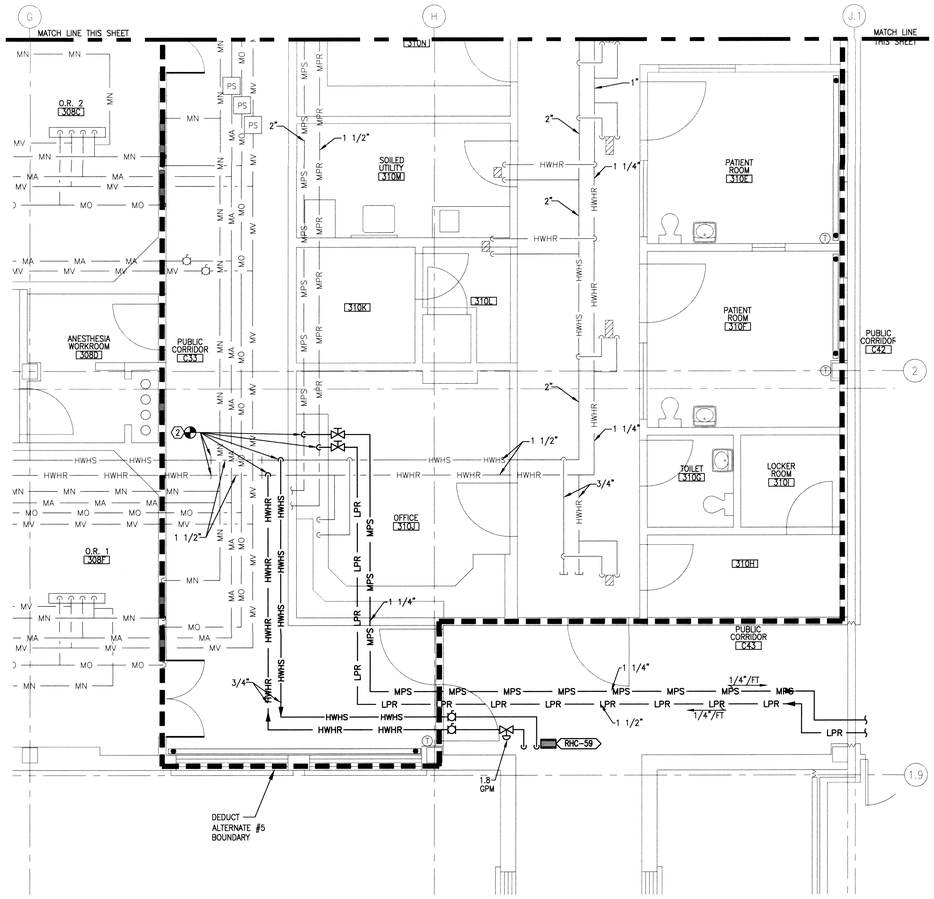
DWG 120 OF 188

DEPARTMENT OF VETERANS AFFAIRS



BUILDING 85 – DEDUCT ALTERNATE #5 THIRD FLOOR MEDICAL GAS AND MECHANICAL PIPING REMODEL PLAN

M10 SCALE: 1/4" = 1'-0"



BUILDING 85 – DEDUCT ALTERNATE #5 THIRD FLOOR MEDICAL GAS AND MECHANICAL PIPING REMODEL PLAN

M10 SCALE: 1/4" = 1'-0"

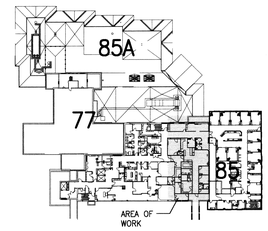
DEDUCT ALTERNATE #5 REMODEL NARRATIVE

A. OMIT PIPING AND ASSOCIATED VALVES AND CONTROLS TO AIR TERMINAL UNITS CAV-89, VAV-88 AND CAV-90.

B. OMIT NEW 2" HEATING WATER SUPPLY SERVICE TIE-IN AT EXISTING SHAFT AND ASSOCIATED 1 1/2" BACKFEED ADJACENT TO OR #1 AND #2.

SHEET KEYNOTES

1. CONNECT TO EXISTING HEATING WATER SUPPLY WITH NEW AT THIS LOCATION.
2. CONNECT TO EXISTING HEATING WATER SUPPLY AND RETURN WITH NEW AT THIS LOCATION.



THIRD FLOOR KEY PLAN

NOT TO SCALE

PLAN NORTH

PLAN NORTH 0 2' 4' 8'

FOR CONSTRUCTION

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317_M102B

XREF FILE NAME: 85A3FL_ALT 85P3HV_ALT

DRAWING TITLE: DEDUCT ALTERNATE #5 THIRD FLOOR MEDICAL GAS AND MECH PIPING REMODEL PLAN

APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE

APPROVED: MEDICAL CENTER DIRECTOR

PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT

BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA

LOCATION: VAMC BOISE, IDAHO

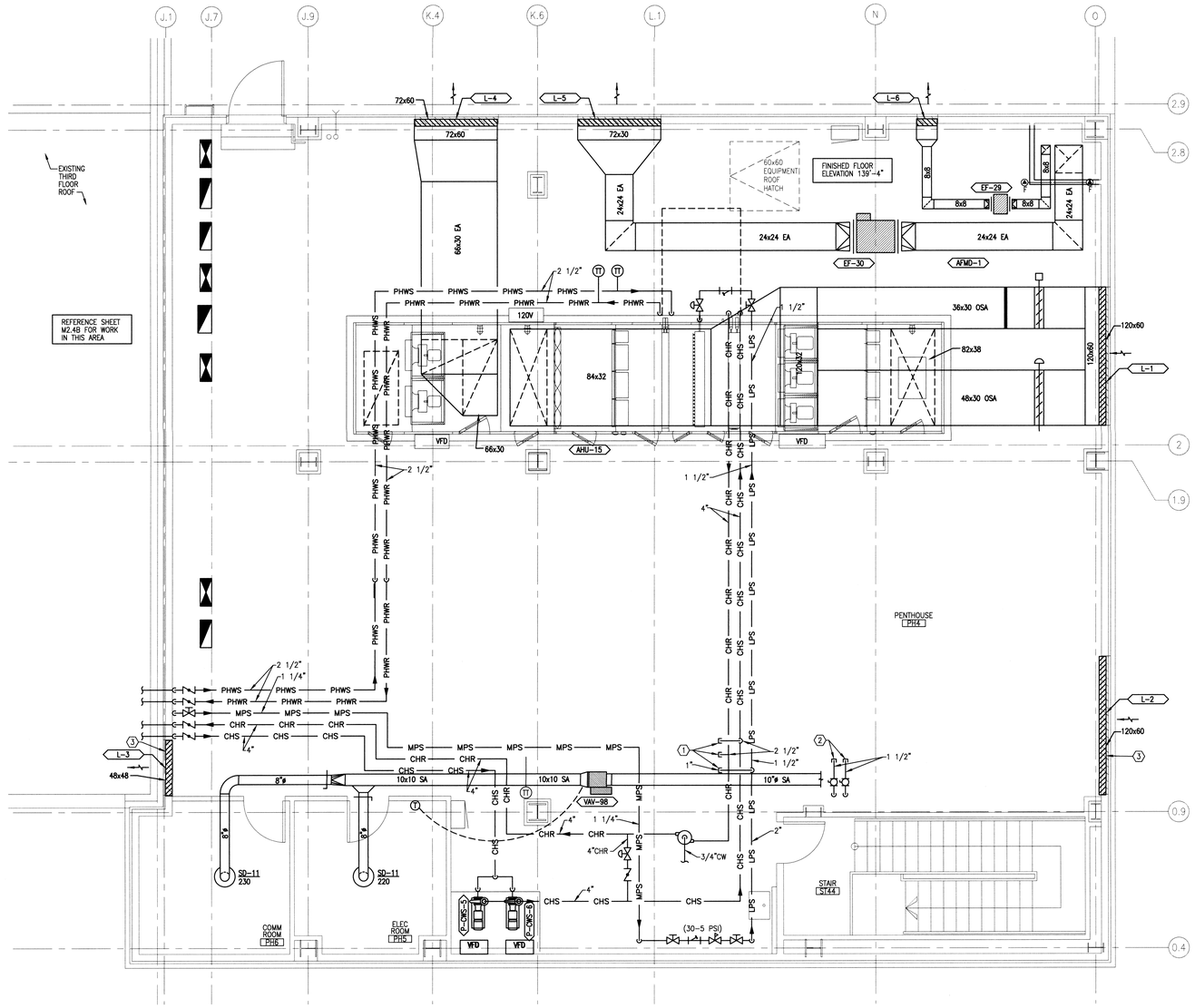
DATE: 11/01/2011

PROJECT NO.: 531-317

DRAWING NO.: M10.2B

DWG 121 OF 188

DEPARTMENT OF VETERANS AFFAIRS



M10 BUILDING 85 – DEDUCT ALTERNATE #6 PENTHOUSE HVAC PLAN
SCALE: 1/4" = 1'-0"

PLAN NORTH 0 2' 4' 8'

DEDUCT ALTERNATE #6 NARRATIVE

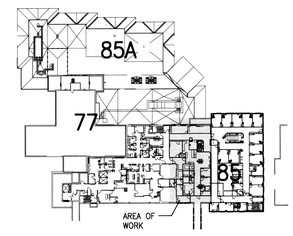
A. OMIT AIR HANDLING UNIT AHU-16 ALONG WITH ASSOCIATED DUCTWORK, PIPING AND CONTROLS.

B. PROVIDE NEW SUPPLY AIR FEED OFF OF AHU-15 FOR VAV-98.

C. OMIT VAV-91 AND VAV-92 ALONG WITH ASSOCIATED DUCTWORK, PIPING AND CONTROLS.

SHEET KEYNOTES

1. CAP PIPING FOR FUTURE AHU-16.
2. CAP HEATING WATER RETURN AND SUPPLY FOR FUTURE.
3. PROVIDE LOUVERS L-2 AND L-3 FOR FUTURE AHU-16.



THIRD FLOOR KEY PLAN
NOT TO SCALE

PLAN NORTH

FOR CONSTRUCTION

REVISIONS | DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317_M101C
XREF FILE NAME: 85APH 85MPHHV_ALT

DRAWING TITLE: DEDUCT ALTERNATE #6 THIRD FLOOR PENTHOUSE HVAC PLAN

APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE

APPROVED: MEDICAL CENTER DIRECTOR

PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT

BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA

LOCATION: VAMC BOISE, IDAHO

DATE: 11/01/2011
PROJECT NO.: 531-317
DRAWING NO.: M10.3
DWG 122 OF 188

DEPARTMENT OF VETERANS AFFAIRS

ABBREVIATIONS

A/E	ARCHITECT / ENGINEER
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AG	AIR GAP
CI	CAST IRON
CO	CLEANOUT (ABOVE FLOOR)
COTG	CLEANOUT TO GRADE
CW	COLD WATER – DOMESTIC
(E)	EXISTING
FCO	FLOOR CLEANOUT
HB	HOSE BIB
HWS	HOT WATER – DOMESTIC
INV	INVERT
IPC	INTERNATIONAL PLUMBING CODE
NG	NATURAL GAS
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
OFD	OVERFLOW DRAIN
RD	ROOF DRAIN
RPBP	REDUCED PRESSURE BACKFLOW PREVENTER
SAN	SANITARY SEWER
TP	TRAP PRIMER
TYP	TYPICAL
V	VENT
VTR	VENT THROUGH ROOF
W	WASTE
WCO	WALL CLEANOUT

PLUMBING SYMBOLS

CW — CW	DOMESTIC COLD WATER
CD — CD	CONDENSATE DRAIN
GAS — GAS	NATURAL GAS
HWS — HWS	DOMESTIC HOT WATER SUPPLY
HWR — HWR	DOMESTIC HOT WATER RETURN
SAN — SAN	SANITARY SEWER
SEW — SEW	STORM SEWER
V — V	VENT
	DIRECTION OF PIPE PITCH (DOWN)
	REDUCER OR INCREASER
	TOP CONNECTION, 45° OR 90°
	BOTTOM CONNECTION, 45° OR 90°
	CAPPED OUTLET
	RISE OR DROP IN PIPE
	UNION
	PIPE UP
	PIPE DOWN
	POINT OF CONNECTION BETWEEN NEW AND EXISTING WORK
	LIMIT OF DEMOLITION
	STRAINER
	THERMOMETER
	PRESSURE GAGE
CO	CLEAN OUT
FCO	FLOOR CLEAN OUT
WCO	WALL CLEAN OUT
	GATE VALVE
	CHECK VALVE
	CIRCUIT SETTER
	BUTTERFLY VALVE
	BALL VALVE

DRAWING INDEX

GENERAL NOTES

1. DRAWINGS SHOWN IN INDEX REFLECT ASSOCIATED PLANS AS PART OF THIS PROJECT. REFERENCE APPROPRIATE PLANS FOR COORDINATION OFF ALL MECHANICAL WORK.
2. WORK PERFORMED IN OCCUPIED PORTIONS OF THE BUILDING TO BE SCHEDULED AND COORDINATED WITH VA COTR. IT SHALL BE ASSUMED THAT THIS WORK IS TO BE PERFORMED DURING NON-PEAK TIMES BETWEEN THE HOURS OF 6PM AND 7AM UNLESS OTHERWISE APPROVED BY THE VA COTR.
3. THE VA REQUIRES THAT ALL PENETRATIONS THROUGH FIRE RATED BARRIERS BE ACCOMPLISHED BY A QUALIFIED FIRESTOP CONTRACTOR IN ACCORDANCE WITH SECTION 078400. WHEN WORK TAKES PLACE WITHIN EXISTING BUILDING THAT ARE NOT SEPARATED BY A 2-HOUR BARRIER FROM OCCUPIED AREAS, AND WHERE IT IS NOT FEASIBLE TO HAVE A QUALIFIED FIRESTOP CONTRACTOR PROVIDING FIRE SEALING ON A DAILY BASIS, IT SHALL BE THE RESPONSIBILITY OF THE TRADE PENETRATING THE FIRE RATED BARRIER TO PROVIDE TEMPORARY FIRE PROTECTION OF ALL PENETRATIONS AT THE END OF EACH WORK DAY.
   TEMPORARY PROTECTION MUST MEET ALL NFPA CODES RELATED TO FIRE BARRIER PENETRATIONS. THE TEMPORARY PROTECTION MUST BE MAINTAINED IN PROPER ORDER UNTIL THE PERMANENT FIRE STOPPING MATERIAL IS INSTALLED. FIREBRICKS OR FIRE PLUGS MUST BE USED TO SEAL PENETRATIONS IN TEMPORARY OR PERMANENT FIRE SEPARATIONS (FLOORS AND WALLS) UNTIL THEY CAN BE PROPERLY FIRE SEALED (I.E. CORE DRILLS FOR NEW SEWER LINES PRIOR TO INSTALLATION AND FIRE STOPPING OF SEWER LINES.)

REVISIONS | DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

ZGA. Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317_P01
XREF FILE NAME: 531-317_xVAbord

DRAWING TITLE: PLUMBING LEGEND / SYMBOLS / ABBREVIATIONS
APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE
APPROVED: MEDICAL CENTER DIRECTOR

PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT
BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA
LOCATION: VAMC BOISE, IDAHO

DATE: 11/01/2011
PROJECT NO.: 531-317
DRAWING NO.: P0.1
DWG 123 OF 188

FOR CONSTRUCTION
DEPARTMENT OF VETERANS AFFAIRS

PLUMBING FIXTURE SCHEDULE

MARK	DESCRIPTION	WASTE PIPE		VENT PIPE		COLD WATER		HOT WATER		WASTE FIXTURE UNITS	CW WATER FIXTURE UNITS	HW WATER FIXTURE UNITS	MANUFACTURER / MODEL	TRIM AND DETAIL	REMARKS
		IN	[mm]	IN	[mm]	IN	[mm]	IN	[mm]						
P-101	WALL HUNG WATER CLOSET (ADA)	4.00	[100]	2.00	[50]	1.00	[25]	0.00	[ ]	6.00	10.00	NA	KOHLER - KINGSTON K-4330	FLUSH VALVE - SLOAN UPPERCUT WES-111 WITH TRAP PRIMER CONNECTION. SEAT - KOHLER K-4670-SA; CLOSET SUPPORT - J.R. SMITH 0440Y WITH M50	MOUNT WATER CLOSET SEAT 18" AFF
P-102	SWINGETTE	4.00	[100]	2.00	[50]	1.00	[25]	0.50	[13]	6.00	10.00	0.75	WHITEHALL MODEL 4050-CNCT-LFN-N4	COUNTER TOP FINISH - CORIAN, RAFFIA ; CABINET FINISH - ARVINYL LAMINATE CORP ; FLAMENCO CHERRY # 806250 7 MIL	SEE PLANS FOR LEFT OR RIGHT HAND CONFIGURATION
P-103	BARIATRIC WATER CLOSET (ADA)	4.00	[100]	2.00	[50]	1.00	[25]	0.00	[ ]	6.00	10.00	NA	ZURN MODEL Z5681	FLUSH VALVE - SLOAN UPPERCUT WES-111 ; CLOSET SUPPORT - ZURN Z1204-N4-XB	CARRIER RATED FOR 1,000 LB CAPACITY. MOUNT CARRIER TO FLOOR DECK WITH 1/2" DIAMETER x SST ALL THREAD THROUGH BOLTS WITH P1000 BACKER. FIELD CUT P1000 LENGTH AS REQUIRED TO SPAN BETWEEN ADJACENT DOWN FLUTES
P-401	LAVATORY (ADA)	2.00	[50]	1.50	[38]	0.50	[13]	0.50	[13]	1.00	0.75	0.75	KOHLER - GREENWICH MODEL K-2030	FAUCET - KOHLER CORALAIS K-15598-P ; SUPPLY STOPS - KOHLER K-7608 ; OFFSET TAILPIECE - DEARBORN BRASS 760W-1 ; P-TRAP - DEARBORN BRASS 507-1 ; PIPE INSULATION - TRUEBRO LAV GUARD 2 MODEL #103 E-Z ; SUPPORT - J.R. SMITH 0770	PROVIDE 4" CENTERS FOR FAUCET MOUNTING
P-501	SERVICE SINK	3.00	[75]	2.00	[50]	0.75	[19]	0.75	[19]	2.00	3.00	3.00	KOHLER - WHITBY MODEL K-6710	FLOOR MOUNTED CAST IRON WITH ACID RESISTANT ENAMEL FINISH AND OPTIONAL K-8940 COATED WIRE RIM GUARD ; STRAINER - KOHLER K-9146 ; FAUCET - KOHLER K- 8928	
P-502	NURSE STATION WALL HUNG SINK	2.00	[50]	1.50	[38]	0.50	[13]	0.50	[13]	1.00	0.75	0.75	KOHLER - GREENWICH MODEL K-2030	FAUCET - CHICAGO 786-GN2FCXKCP ; SUPPLY STOPS - KOHLER K-7608 ; OFFSET TAILPIECE - DEARBORN BRASS 760W-1 ; P-TRAP - DEARBORN BRASS 507-1 ; PIPE INSULATION TRUBRO LAV GUARD 2 MODEL #103 E-Z ; SUPPORT - J.R. SMITH 0720.	
P-503	SCRUB SINK	2.00	[50]	1.50	[38]	0.75	[19]	0.75	[19]	3.00	1.50	1.50	AMERICAN STANDARD MODEL 9047.093	FAUCET - CHICAGO 626-E29VPCP ; FOOT PEDAL - CHICAGO 806-CP WITH EXTENDED PEDAL ; MIXING VALVE- BRADLEY MODEL S59-2005 ; TAILPIECE - DEARBORN BRASS 761-1 ; P-TRAP - DEARBORN BRASS 510-1	PROVIDE 1/2" FLEXIBLE HOSE CONNECTION FROM FOOT PEDAL STOP ASSEMBLY TO FAUCET CONNECTION
P-504	BREAK ROOM AND STAFF LOUNGE COUNTER MOUNTED SINK	2.00	[50]	1.50	[38]	0.50	[13]	0.50	[13]	1.00	0.75	0.75	ELKAY MODEL DLR202210	18 GAUGE 304 STAINLESS STEEL ; FAUCET CHICAGO 786-GN2FLXKCP ; SUPPLY STOPS - KOHLER K- 7608 ; TAILPIECE - ELKAY LKAD35 LESS LKADOS ; P-TRAP - DEARBORN BRASS 510-1	3 - HOLE PUNCH WITH 4" CENTERS FOR FAUCET MOUNTING
P-505	NOURISHMENT COUNTER MOUNTED SINK	2.00	[50]	1.50	[38]	0.50	[13]	0.50	[13]	1.00	0.75	0.75	ELKAY MODEL DLR202210	18 GAUGE 304 STAINLESS STEEL ; FAUCET - CHICAGO 786 - GN2FLXKCP ; SUPPLY STOPS - KOHLER K-7608 ; TAILPIECE - ELKAY LK18B ; P-TRAP - DEARBORN BRASS 510-1	
P-506	PATIENT ROOM COUNTER MOUNTED SINK FAUCET	2.00	[50]	1.50	[38]	0.50	[13]	0.50	[13]	1.00	0.75	0.75	CHICAGO MODEL 786-GN2FCXKCP	SUPPLY STOPS - KOHLER K-7608 ; OFFSET TAILPIECE - DEARBORN BRASS 760W-1 ; P-TRAP - DEARBORN BRASS 507-1 ; PIPE INSULATION - TRUBRO LAV GUARD 2 MODEL #103 E-Z	SOLID SURFACE SINK AND COUNTERTOP BY OTHERS PROVIDE 8" FIXED CENTERS FOR FAUCET MOUNTING
P-507	MEDICAL STORAGE AND PACU COUNTER MOUNTED SINK	2.00	[50]	1.50	[38]	0.50	[13]	0.50	[13]	1.00	0.75	0.75	ELKAY MODEL DLR151710	18 GAUGE 304 STAINLESS STEEL ; FAUCET - CHIGAGO 786 - GN2FLXKCP ; SUPPLY STOPS - KOHLER K-7608 ; TAILPIECE - ELKAY LK18B ; P-TRAP - DEARBORN BRASS 510-1	
P-508	PENTHOUSE UTILITY SINK	3.00	[75]	2.00	[50]	0.75	[19]	0.75	[19]	2.00	3.00	3.00	KOHLER- SUDBURY MODEL K-6650	FAUCET - KOHLER K- 8928 ; P-TRAP - KOHLER K- 6673 ; RIM GUARD - KOHLER K-8932 AND K-8934	PROVIDE WITH WALL BRACKET K-64512
P-601	DRINKING FOUNTAIN (ADA)	2.00	[50]	1.50	[38]	0.50	[13]	0.00	[ ]	0.50	0.75	NA	ELKAY MODEL LZSTL8C	BARRIER FREE TWO STATION WALL MOUNT WITH FILTER SYSTEM ; APRON - ELKAY LKAPREZL	CONNECT TO WATER SUPPLY WITH DI-ELECTRIC COUPLING. PROVIDE P-TRAP (FIELD CONFIGURED) AS REQUIRED TO MEET ADA REQUIREMENTS
P-701	WALL SHOWER (ADA)	0.00	[ ]	0.00	[ ]	0.75	[19]	0.75	[19]	NA	1.50	1.50	BRADLEY MODEL HN200	RECESSED MOUNTED 16 GUAGE 304 STAINLESS STEEL WALL ASSEMBLY WITH HAND HELD SHOWER SPRAY, DIVERTER VALVE, SHOWER HEAD, SUPPLY INLETS AND FLOW CONTROL VALVE	BARRIER FREE SEAT, CURTIAN AND GRAB BARS SEE ARCHITECTURAL PLANS
P-800	HEMODIALYSIS UTILITY BOX	2.00	[50]	1.50	[38]	0.50	[13]	0.00	[ ]	1.00	0.75	NA	WHITEHALL MODEL 8196	STAINLESS STEEL RECESSED UTILITY BOX WITH HINGED DOOR AND CAM LOCK	PROVIDE UTILITY BOX FOR VACUUM BREAKER (LEONARD MODEL EVB) MATCH CONSTRUCTION OF DIALYSIS BOX LESS VALVE AND WASTE CONNECTION
P-802	FLOOR DRAIN	2.00	[50]	2.00	[50]	0.00	[ ]	0.00	[ ]	2.00	NA	NA	J.R. SMITH MODEL 2005	NICKLE BRONZE STRAINER AND CAST IRON BODY WITH 1/2" TRAP PRIMER CONNECTION (P050)	PROVIDE TRAP PRIMER - SIOUX CHIEF 695 SERIES FOR SOILED UTILITY 349
P-803	FLOOR SINK	2.00	[50]	1.50	[38]	0.00	[ ]	0.00	[ ]	2.00	NA	NA	J.R. SMITH MODEL 3020Y	ACID RESISTANT COATED WITH ROUND NICKEL BRONZE TOP (1/2 GRATE) WITH DOME STRAINER	
P-804	DECONTAMINATION PATIENT SHOWER/PENTHOUSE FLOOR DRAIN	3.00	[75]	2.00	[50]	0.00	[ ]	0.00	[ ]	2.00	NA	NA	J.R. SMITH MODEL 2005	STAINLESS STEEL STRAINER AND CAST IRON BODY WITH 1/2" TRAP PRIMER CONNECTION (P050)	PROVIDE TRAP PRIMER - SIOUX CHIEF 695 SERIES
P-805	SHOWER BASE	2.00	[50]	2.00	[50]	0.00	[ ]	0.00	[ ]	2.00	NA	NA	BRADLEY MODEL TSP-3636	36x36 SHOWER BASE WITH SOLID SURFACE AND CHROME PLATED BRASS DRAIN ASSEMBLY	PROVIDE COLOR SAMPLE FOR SELECTION BY ARCHITECT
P-806	PENTHOUSE FLOOR SINK	3.00	[75]	2.00	[50]	0.00	[ ]	0.00	[ ]	2.00	NA	NA	J. R. SMITH MODEL 3420Y	ACID RESISTANT COATED WITH ACID RESISTANT COATED SQUARE TOP (1/2 GRATE) WITH DOME STRAINER	COORDINATE DRAIN PLACEMENT WITH MECHANICAL EQUIPMENT COOLING COIL LOCATION AND TRAP ASSEMBLY DETAIL
P-807	DOWNSPOUT NOZZLE	3.00	[75]	0.00	[ ]	0.00	[ ]	0.00	[ ]	NA	NA	NA	J. R. SMITH MODEL 1771	NICKLE BRONZE FINSH WITH BIRD SCREEN	
P-808	PRIMARY ROOF DRAIN	0.00	[ ]	0.00	[ ]	0.00	[ ]	0.00	[ ]	NA	NA	NA	J. R. SMITH MODEL 1015Y	ROUGH BRONZE DOME FINISH WITH ADJUSTABLE SUMP RECIEVER AND UNDER DECK CLAMP-CL	SEE PLANS FOR SIZE OF DRAIN REQUIRED
P-809	SECONDARY ROOF DRAIN	0.00	[ ]	0.00	[ ]	0.00	[ ]	0.00	[ ]	NA	NA	NA	J. R. SMITH MODEL 1045	ROUGH BRONZE DOME FINISH WITH ADJUSTABLE EXTENSION SLEEVE, SUMP RECEIVER, UNDER DECK CLAMP-CL, 2 1/2" WATER DAM	SEE PLANS FOR SIZE OF DRAIN REQUIRED
P-810	FREEZLESS HOSE BIBB	0.00	[ ]	0.00	[ ]	0.75	[19]	0.00	[ ]	NA	NA	NA	WATTS MODEL HY-420	NON-FREEZE KEY OPERATED WITH CHROME PLATED FACE, INTEGRATED VACUUM BREAKER AND 3/4" HOSE CONNECTION	

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 9436 STATE OF IDAHO KELLY WOODS

Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317_P02

XREF FILE NAME: 531-317_xVAbord

DRAWING TITLE: PLUMBING SCHEDULES

PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT

DATE: 11/01/2011

PROJECT NO.: 531-317

APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE

APPROVED: MEDICAL CENTER DIRECTOR

BUILDING NUMBER: 85 | CHECKED: JB | DRAWN: JA

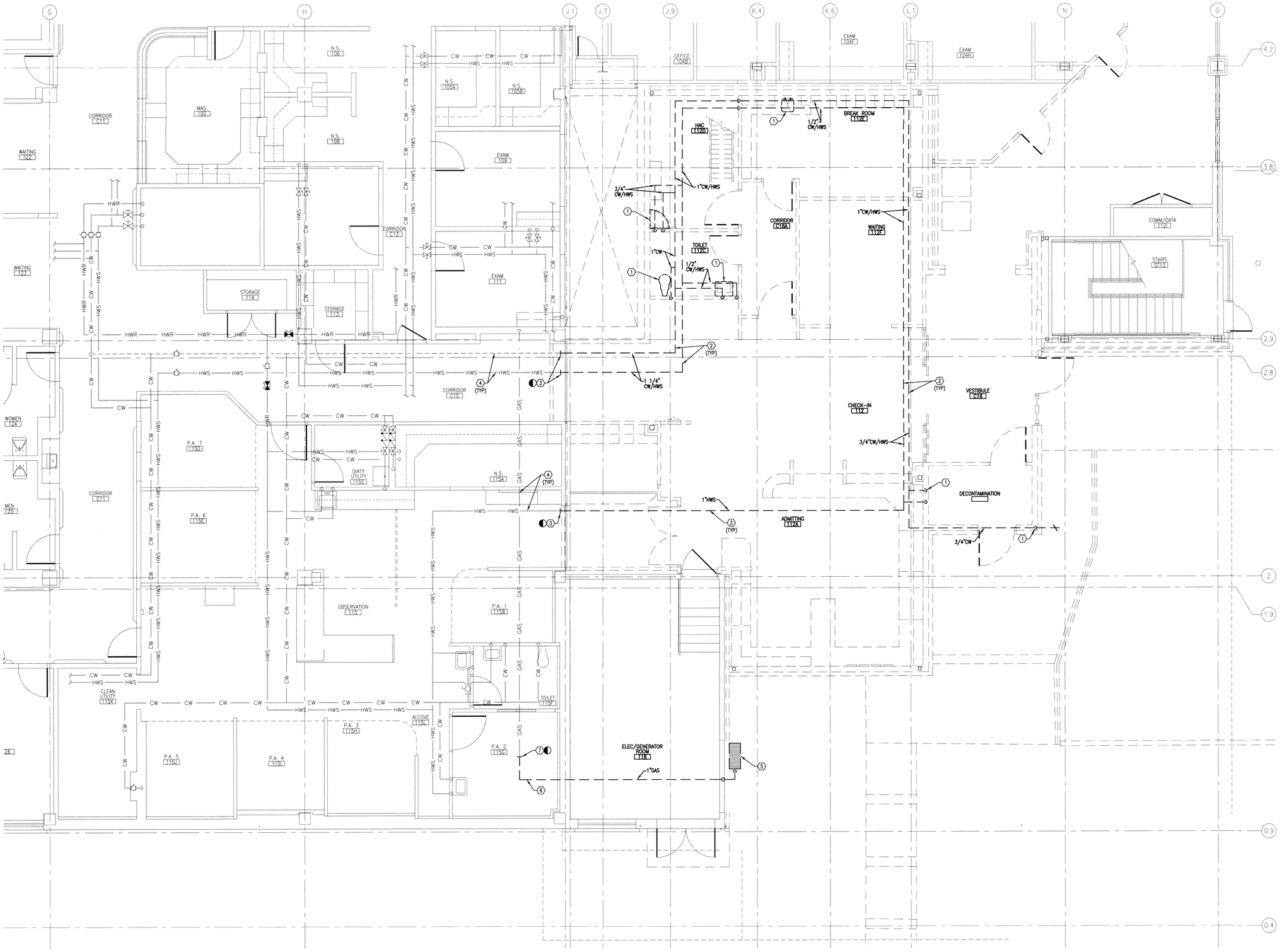
LOCATION: VAMC BOISE, IDAHO

DRAWING NO.: P0.2

DWG 124 OF 188

FOR CONSTRUCTION

DEPARTMENT OF VETERANS AFFAIRS



P1 BUILDING 85 – FIRST FLOOR PLUMBING DEMOLITION PLAN
SCALE: 1/4" = 1'-0"

PLAN NORTH 0 2' 4' 8'

GENERAL SHEET NOTES

A. AS APPLICABLE THIS CONTRACTOR SHALL VERIFY AND COORDINATE PLUMBING EQUIPMENT TO BE TURNED OVER TO OWNER.

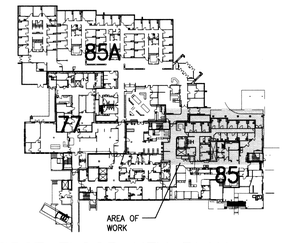
B. THIS CONTRACTOR SHALL VERIFY ALL AREAS SERVED BY PLUMBING SYSTEMS BEING REMOVED AND COORDINATE ALL DOWNTIME AND NEW SYSTEM ARRANGEMENTS WITH THE VA HOSPITAL. WORK MAY HAVE TO BE PERFORMED DURING NON-WORKING HOURS.

C. THIS CONTRACTOR WHERE REQUIRED SHALL PROVIDE A TEMPORARY MEANS FOR KEEPING EXISTING PLUMBING SYSTEMS IN SERVICE WHILE DEMOLITION AND NEW WORK IS BEING DONE.

D. CONTRACTOR SHALL FIELD VERIFY ALL PLUMBING ITEMS PRIOR TO COMMENCING NEW WORK. NO ADDITIONAL COSTS WILL BE ALLOWED FOR CONTRACTOR'S FAILURE TO BECOME FAMILIAR WITH ALL PLUMBING CONDITIONS.

SHEET KEYNOTES

1. REMOVE EXISTING PLUMBING FIXTURE AND ASSOCIATED ROUGH-IN PLUMBING.
2. REMOVE PLUMBING SHOWN BOLD AND DASHED ALONG WITH ASSOCIATED VALVES, STOPS, HANGERS AND INSULATION.
3. REMOVE EXISTING PLUMBING BACK TO THIS POINT. SEE SHEET P2.0 FOR NEW WORK.
4. EXISTING PLUMBING SHOWN LIGHT IS TO REMAIN.
5. EXISTING GAS REGULATOR TO BE REMOVED AND RELOCATED ALONG WITH ASSOCIATED GAS PIPING AS PART OF THE REPLACE ELECTRICAL SYSTEMS BUILDING 85 PROJECT. THIS CONTRACTOR SHALL COORDINATE NEW LOCATION OF GAS REGULATOR AND REMODEL WORK OF NATURAL GAS PIPING UNDER THIS PROJECT WITH THE PROJECT NOTED.
6. REMOVAL OF NATURAL GAS PIPING SHOWN BOLD AND DASHED IS BY OTHERS. (NIC)
7. APPROXIMATE LOCATION FOR NEW GAS CONNECTION. REFERENCE NOTE 5 THIS SHEET.



FIRST FLOOR KEY PLAN
NOT TO SCALE
PLAN NORTH

FOR CONSTRUCTION

REVISIONS	DATE

POWER ENGINEERS
2041 South Cobalt Point Way
Meridian, Idaho 83642
208-288-6100

PROFESSIONAL ENGINEER REGISTERED 19436 STATE OF IDAHO KELLY WOODS

ZGA Architects and Planners, Chartered
565 W. Myrtle Street, Suite 225 Boise, Idaho 83702-7606

CAD FILE NAME: 531-317_P10
XREF FILE NAME: 85A1FL 85P1WA

DRAWING TITLE: FIRST FLOOR PLUMBING DEMOLITION PLAN	PROJECT TITLE: REPLACE AND MODERNIZE SURGERY / INTENSIVE CARE UNIT		DATE: 11/01/2011
			PROJECT NO.: 531-317
APPROVED: CHIEF OF FACILITY MANAGEMENT SERVICE	BUILDING NUMBER: 85	CHECKED: JB	DRAWN: JA
APPROVED: MEDICAL CENTER DIRECTOR	LOCATION: VAMC BOISE, IDAHO		DRAWING NO.: P1.0
			DWG 125 OF 188

DEPARTMENT OF VETERANS AFFAIRS